

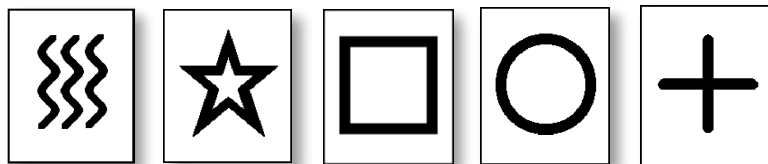
Through Time and Space: The Evidence for Remote viewing

Stephan A. Schwartz *

Beginning in the late 1960s, and continuing down to the late 1990s, for three decades there was an explosion of interest in nonlocal perception, the ability of an individual to acquire information that should not be accessible because of shielding by space, time, or both. It centered on two distinct but related protocols: Remote viewing and Ganzfeld. Although there were a number of single studies done,^{1,2,3,4,5,6,7} three major laboratories, SRI (later SAIC, and later still LFR), the Princeton Engineering Anomalies Research (PEAR, later ICRL) lab, and Mobius emerged. The labs arose concurrently, led the way, and maintained continuous systematic research on this aspect of consciousness throughout those years. A small community, no more than a dozen scientists, dedicated to understanding how this mysterious aspect of the mind worked.

Concurrently, another group of labs, led by The Psychophysical Laboratory, developed a kind of first cousin to remote viewing known as the Ganzfeld Protocol. This research is covered in chapter four of this volume, “Revisiting the Ganzfeld ESP Debate: A Basic Review and Assessment,” by Bryan J. Williams, University of New Mexico, but I mention it here because it is important to see these two vectors of research in their proper mutual context. All of these researchers were friends as well as colleagues, and information was freely shared. To comprehend the impact of nonlocal perception research fully, it should be viewed in this totality.

The new protocols were a response to the mechanistic number guessing, dice calling, Zener Card naming protocols that dominated the earlier era of parapsychology. All the new remote viewing labs enthusiastically embraced the rigors of randomization,



Zener Cards

blindness, and an evolving sophistication of statistical analysis, but they did so for the

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most part using free response protocols that allowed the person providing the information free rein to speak whatever came to mind in response to their nonlocal perception task.

One of the main realities driving these new labs was the undeniable fact that the old protocols produced what came to be called the Decline Effect: The longer people did a repetitive protocol like Zener card naming, the worse the results. The Zener protocol came in several variants, but basically a researcher sat at a table across which a visual barrier had been placed, while a viewer sat on the other side of the table. The viewer could not see what the researcher was doing. The task was to describe or name the card the researcher held up. In his very first monograph in 1934, J.B. Rhine reported that “When procedures... were used that required the subject to make his calls more slowly and deliberately, a decline effect (i.e., above chance scoring declining to chance as the run proceeded) was the most common tendency.”⁸

The truth is, the experiments became boring, and boring is deadly to nonlocal perception. The Ganzfeld and, even more, the remote viewing researchers wanted a naturalistic experience, one that was more engaging, and nonlocal perception research lent itself to a more naturalistic format. Those of us doing this research sought to design protocols that had all the rigorous statistical analyses that the Rhine lab had championed, but a data gathering process that was more like spontaneous conversation. The result was Ganzfeld and, particularly, remote viewing. It is also worth noting here Rhine’s description of the participant as a “subject,” an appellation that presumed the researcher was at arm’s length and was studying an individual, the subject, while playing no role in the quality of their performance. As will be seen, this model of an experimental session is wrong in both concept and application. In fact, both the person providing the nonlocal perception information and the person(s) carrying out the study are players influencing the outcome.

There are several differences between Ganzfeld and remote viewing, but one great commonality: All of the labs were unfazed by the demands of critics, indeed embraced them, and are notable for the rigor of their research. They came to realize that blindness and randomization and the other factors that obsessed critics didn’t play much of a role, essentially were not barriers, although useful to keep everyone’s mind uncluttered with speculations —the sessions were blind, nobody knew the answer, so there was no point in thinking about it. Only nonlocal perception could provide the answer. The whole premise of remote viewing is that no matter how you hide the target it can still be discerned and described. So, as in my case, at Mobius, when one critic demanded a particular kind of random number generator be used in target selection, thinking that would eliminate success, we were only too happy to comply.⁹ The goal of all the labs was, as SRI physicist Russell Targ put it, for “proof... so strong it would be statistically unreasonable to deny it.”¹⁰

One other thing needs to be mentioned if one is to understand these labs. Each looked at nonlocal perception, as a part of a greater whole, one which included nonlocal perturbation. Under that rubric a number of protocols shelter, but nonlocal perturbation is basically consciousness acting on physical reality. As I will describe for the PEAR lab, and this was their main interest, with remote viewing as their secondary activity, it was

various kinds of random number/event generating devices (RNG/REG). They were famous for a kind of Pachinko machine that took up most of one wall in the Princeton lab. Participants would be asked to make the little balls fall in a non-random way as they cascaded through the pins. In the case of SRI/SAIC/LFR, whose emphasis was principally on remote viewing this meant some small RNG studies, and a several year study in which the task was to move a physical device. For Mobius, which was always more anthropologically oriented than the other labs it was work with REGs but, mainly, studies involving nonlocal perturbation in the context of Therapeutic Intention—healing—exploring whether one organism could affect the well-being of another organism, or change the molecular structure of water exposed to healing intention. Such Nonlocal Perturbation work is beyond the scope of this chapter, but this holistic approach to both phenomena is the context in which all the labs worked. Finally, it is important to know that all of the labs and all the researchers sought to develop both a theoretical and practical understanding of how both nonlocal processes worked, and how they integrated into a broader understanding of reality.

SRI/SAIC/LFR

In 1972, two well-respected laser physicists, Hal Puthoff and Russell Targ, each of whom had had a successful career in what at the time was an exciting cutting edge area of science—lasers—decided to make a career change. They each had developed an interest in the nonlocal aspects of consciousness had met and decided to join forces. On the basis of some initial funding Targ was able to get, partly from a meeting with the father of the American space program Wernher von Braun, they were able to interest the Stanford Research Institute (SRI) where Puthoff had already gone to work as a staff scientist in starting a program. Just the fact that such a program came to exist at SRI is notable. This was a completely different league from the parapsychological labs of the 1930s to '60s tucked away on university campuses, or the small independent foundations operating on a shoestring. SRI was big science. Funding was at the level of standard serious mainstream research, which is to say SRI's budget was multiple tens of millions of dollars.

It was a major think tank and laboratory of many parts, for a wide range of defense and intelligence projects, as well as more traditional science endeavors. This government work became an issue during the Viet Nam era, and Stanford Research Institute broke with the University rather than give up the millions of dollars of funding it represented. It became simply SRI, which was how most people had always referred to it anyway. SRI was a good choice as a base for what Targ and Puthoff had in mind. The accounting structure and management knew the complex government contract drill, and since much of SRI's research was already classified the institute was set up to deal with that as well.

Puthoff had been a Naval Intelligence Officer, and Targ had previously done some work for the CIA, and they decided not to go after the usual academic funding, which was very meager, but instead to try to interest a major government agency in the military or intelligence sectors. They started working with Pat Price, a former Burbank police officer who always felt he had a “gift” of getting information intuitively. In a new incarnation of the target description protocol first used by René Warcollier, a chemical engineer and

research colleague with Nobel Laureate Charles Richet at the Institute Metaphysique, in which an individual would be asked to make a drawing replicating one made by a researcher in some separated space. In the SRI protocol Targ would be the interviewer and Puthoff would go to a randomly selected location. At an agreed time Targ would ask Price to describe where Puthoff was, what was to be found there. In nine location sessions, he produced images and information sufficiently accurate that the odds of doing so by chance were calculated to be one in 100,000, whereas one in 20 is the usual threshold for significance. These sessions had an effect size of 1.3.¹¹

In 1973, as their initial funding was running out, they wrote a research proposal, *Perceptual Augmentation Techniques*, to explore “human perceptual abilities,” which explicitly included what “are sometimes considered paranormal phenomena.”¹² This attracted funding by the CIA and the Army, which resulted in what became a 24 year long research program in a unique two tiered research effort. They would do basic research on nonlocal phenomena which they could publish while, at the same time, under a variety of Code names—SCANANTE, PHOENIX, STUNT PILOT, SUN STREAK CENTER LANE, GRILL FLAME and, the best-known, STAR GATE—they would conduct a classified Top Secret applications-oriented remote viewing spying program with a shifting cast of personalities.¹³ (For detailed and informative accounts from military remote viewers, see for example Joe McMoneagle¹⁴ and Paul Smith.)¹⁵

It was this applications aspect that got the program its big funding. As Targ and Puthoff tell it in their book *Mind Reach*, Ingo Swann, a New York artist who was known for his considerable “psychic abilities,” came to their laboratory and agreed to do what they, as physicists, could hardly believe they were asking. They gave Swann randomly selected coordinates provided by their contract monitors, and asked him describe what he perceived there. Swann did not know that Puthoff and Targ had been challenged to the task by government critics. As they tell the story, Swann came in smoking a small cigar, sat in a chair, relaxed for a moment, asked them to give him the coordinates and preceded to describe and draw a highly detailed picture of the site. This was sent back to the challenger. It was correct not only in the descriptions Swann had provided, but in the schematic map he drew, down to its scale.¹⁶ This led to another “test” where Swann and Price were given coordinates and correctly described the site; then Swann mentioned a secret facility that interested him a short distance away from the target site.

University of California Statistics Professor, Jessica Utts, who would go on to play a unique role in nonlocal perception research, was brought in as a consultant for the team and worked with them to develop a statistical analysis approach. She explains what happened next: “One of them apparently named codewords and personnel in this facility accurately enough that it set off a security investigation to determine how that information could have been leaked. Based only on the coordinates of the site, the viewer first described the above ground terrain, then proceeded to describe details of the hidden underground site.”¹⁷

Swann also claimed he could describe a secret Communist site in the Urals, and proceeded to do so accurately. These successes convinced CIA funders, and the SRI lab was set up on a solid financial footing.

In 1974 Puthoff and Targ published their first paper in the peer reviewed literature. By careful design and conscious intention, they published in *Nature*, which along with *Science* is the most prestigious peer-reviewed science journal in the world. The paper was couched not in the usual language of parapsychology but in terms any applied scientist would understand: it described a novel information transmission process using a rigorous protocol with careful statistical analysis. It helped that the results of a successful RV session are obvious at a glance, and that the protocol steps all make logical sense.¹⁸ The paper presented what the Warcollier protocol studies had not: a statistical assessment of the probability the result could have happened by chance, which is to say randomly.

Utts describes this well:

“At the heart of any statistical method is a definition of what should happen ‘randomly’ or ‘by chance.’ Without a random mechanism, there can be no statistical evaluation.

“There is nothing random about the responses generated in anomalous cognition experiments; in other words, there is no way to define what they would look like ‘by chance.’ Therefore, the random mechanism in these experiments must be in the choice of the target. In that way, we can compare the response to the target and answer the question: ‘If chance alone is at work, what is the probability that a *target* would be chosen that matches this *response* as well as or better than does the actual target?’

“In order to accomplish this purpose, a properly conducted experiment uses a set of targets defined in advance. The target for each remote viewing is then selected randomly, in such a way that the probability of getting each possible target is known.

“The SAIC remote viewing experiments and all but the early ones at SRI used a statistical evaluation method known as rank-order judging. After the completion of a remote viewing, a judge who is blind to the true target (called a blind judge) is shown the response and five potential targets, one of which is the correct answer and the other four of which are ‘decoys.’ Before the experiment is conducted each of those five choices must have had an equal chance of being selected as the actual target. The judge is asked to assign a rank to each of the possible targets, where a rank of one means it matches the response most closely, and a rank of five means it matches the least.

“The rank of the correct target is the numerical score for that remote viewing. By chance alone the actual target would receive each of the five ranks with equal likelihood, since despite what the response said the target matching it best would have the same chance of selection as the one matching it second best and so on. The average rank by chance would be three. Evidence for anomalous cognition occurs when the average rank over a series of trials is significantly lower than three. (Notice that a rank of one is the best possible score for each viewing.)”¹⁹

The paper was also the first use of Remote viewing as a term-of-art in research literature. The paper, not surprisingly, drew a great deal of attention. Criticism from CSICOP appeared immediately. Particularly prominent in this was a former cabaret magician, who called himself The Great Randi, and a University of Oregon psychology professor, Ray Hyman.²⁰ Another, David Marks, professor of Psychology at the University of Otago, in Dunedin, New Zealand wrote a critique of the paper arguing that sensory cues could explain the outcome.²¹ In response to this criticism, Puthoff and Targ explained why the criticism was not valid and showed a surprising lack of understanding of the protocol.²² Do you know anyone who, off the top of their head could correctly answer the question: Describe what you find at Latitude: 48.04 N, Longitude: 122.41—which are the coordinates for the village of Langley, WA? These attacks, basically an argument over evidence on remote viewing, would not really end until 1995.

There are several things worth noting here. First, at all three labs, SRI/SAIC/LFR, PEAR, and Mobius, a lab culture developed in which the relationship between the viewers and the researchers was quite different from the arm's length relationship between "subjects" and researchers at the earlier era labs. I think it is significant that the term "remote viewing" was coined not by a researcher, but by a viewer, Swann. It turns out it is not a very good term, since remoteness is irrelevant, and it isn't really about viewing, since all the sense impressions report: sight, taste, touch, smell, sound. But that isn't the point, as Targ and Puthoff happily admitted. Speaking of Price and Swann they said, "They virtually taught us how to research psychic phenomena by giving us the insight to focus on those aspects of psychic functioning that people find natural to use in their daily lives."²³ Remote viewing is an interactive process in which, while people play distinct roles, it is recognized that everyone is a player in influencing the outcome.

Also notable whenever any of the three labs received criticism their response was to alter their protocol to obviate the criticism. It didn't change results.

In 1975 Edwin May, a low energy nuclear physicist, joined SRI first as a consultant, then as a senior research scientist, and finally as the program director. The story of this lab, as it went through its various institutional incarnations, is really the story of three physicists of very different temperaments. Each, for a time, was captured by the challenge of working out a kind of engineering of extraordinary human functioning involving nonlocal consciousness.

The same year May joined the lab, so did Hella Hammid, an internationally known fine arts photographer, who was a friend of Targ's. She became involved initially as a control. To everyone's surprise Hammid, who thought she had no ability at all, turned out to be particularly gifted. In one series, using their standard outbound protocol, she was asked to describe nine outdoor targets. Her success was such that the probability of it happening by chance was 2 in a million, for an effect size of 1.5.

This attempt to create a control arose because, at this early phase of their work, the SRI researchers did not understand that the capacity to open to nonlocal awareness, through

remote viewing or any other protocol, is spread through the population like any human skill in a bell curve, very gifted at one end, poorly gifted at the other, with most of us in the middle. The ability to open to nonlocal consciousness, while the capability may vary, is innate. Thus it is not possible to create the strict dichotomy of a medication, placebo drug trial.

In 1975, they published a paper in the IEEE Communications Society Journal, *Information Transmission Under Condition of Sensory Shielding*. It proposed: “Results are presented of experiments suggesting the existence of one or more perceptual modalities through which individuals obtain information about their environment, although this information is not presented to any known sense.”²⁴ The paper covered a series of experiments with Price and Israeli psychic showman Uri Geller. The purpose of these sessions they stated very clearly: “we consider... our primary responsibility—to resolve under conditions as unambiguous as possible the basic issue of whether a certain class of paranormal perception phenomenon exists. So we conducted our experiments with sufficient control, utilizing visual, acoustic and electrical shielding to ensure all conventional paths to sensory input were blocked. At all times we took measures to prevent sensory leakage and to prevent deception, whether intentional or unintentional.”²⁵

In 1976 Puthoff and Targ published a third paper, “Perceptual Channel for Information Transfer Over Kilometer Distances: Historical Perspective and Recent Research,” showing once again that distance didn’t matter; there was no signal attenuation, which led to the question: was there a signal? This would be definitively addressed in the Deep Quest series of experiments using a submarine that Mobius carried out in 1977, in which the SRI team were invited to participate, as described in the Mobius section below.

The basic protocol they were now using was very straightforward: A target pool of over 100 sites within a 30-minute driving distance from the lab was created to which both the viewer and the experimenters were blind, as they were to the judging target set drawn from the larger pool for any particular session. The protocol called for the Outbounders to arrive at the randomly selected site within the allotted 30 minutes, and they were told to stay there for 15 minutes, during which time the researchers would record the perceptions of the viewer.

As it happened, during the course of one of these sessions Hammid began reporting her impressions even before the trial began, and her observations turned out to be notably accurate. This made an enormous impression on the SRI team and led them to change their protocol so that the viewer was asked to describe the target during a 15 minute period 20 minutes before the target was selected, and 35 minutes prior to the Outbounder arriving at the target. An assessment of the nonlocally proffered was made by three independent judges who were given the target set and asked to rank order them while being blind as to which was the correct target.

The criticism they had received also got them thinking how to further blind targets, and this led to the issue of resolution, and thence to sessions in which viewers were asked to describe targets of various sizes.²⁶

To help with this, Puthoff, Targ, and May were joined by psychologist Charles Tart, a professor at University of California, Berkeley, already very well known for his dream research and for his 1972 paper published in *Science*, “States of consciousness and state-specific sciences.”²⁷

In their coordinate sessions they started putting the coordinates in double sealed opaque envelopes and asked people to describe what they perceived at the target site, both in words and with little drawings. These sessions were also double blind, neither the viewer nor the researcher knowing the answer. Once again they randomly selected a target set from a larger target pool, then selected one of the five to seven envelopes.²⁸ It didn’t decrease the “hit” rate. They reduced the coordinates to micro-dots, a piece of spy tradecraft where an image is reduced to something the size of the period at the end of this sentence. Then it can be glued in place of a period on otherwise innocuous correspondence and posted. They just followed the procedure. It didn’t diminish the “hit” rate.

Swann suggested that they should try clay modeling of target sites, and both Hammid and Swann being artists enjoyed that, and the high “hit” rate continued.

In a series run with Hammid they found:²⁹

Medium Size target objects: Book, glasses, trumpet, doll, compass, plant...
6 targets chosen and described, $p = 0.028$.

Mini-targets in aluminum film cans: Spool and pin, curled leaf, belt key-ring, etc. 10 of 10 chosen. Two groups of five, $p = 0.01$ and 0.2 , (0.045).

Micro-dot targets: 1-mm square dots on 35mm film 6 targets, 6 described, $p = 0.019$.

Note here they are still operating on what might be called the transmission-sender, signal, receiver model, and that electromagnetics are very much a consideration. To block this they put the viewers in an electrically shielded room, although they could not shield from the entire spectrum. They also tried hooking Price and Geller up to EEGs to see if they could “perceive whether a remote light was flashing, and to determine whether a subject could perceive the presence of the light, even if only at a noncognitive level of awareness.”³⁰ Although it is not within the scope of this chapter, it is worth noting that this last, the measurement of a physiological response occurring without cognitive awareness, would itself go on to become a major vector of study that would prove to be as robust as remote viewing itself.

The SRI team also began doing sessions precognitively, using a protocol in which the target was not selected until after the session data had been collected. Then a target set would be randomly selected from the lab’s target pool. That is: *At the time the viewing was done there was no designated target.* The only way to obtain correct information about the target was if opening to nonlocal awareness somehow allowed the viewer to

move outside of the limitations of space-time. The “hit” rate they observed in other variants of the protocol continued to hold.

What became increasingly clear was that no matter how a target was hidden in space, or whether it was hidden in time, it could still be described, and the size of the target didn’t really matter. Most important of all in some ways, as each of the RV labs would discover as they proceeded, the dreaded “decline effect” almost universally reported with the Rhine era protocols did not occur with remote viewing. The sessions were engaging; people liked doing them.

As success followed success, the lab began to think beyond proving remote viewing was a real phenomenon, and to focus instead on how it worked. In conjunction with Mobius, they began exploring personality factors, trying to discern whether good viewers could be defined in some way by a test. This is one of the differences in the three labs. SRI was looking for “stars” but processing small numbers of viewers. PEAR explicitly was looking for the “everyman” viewer. Mobius, in the middle of this spectrum, was looking for “stars” by testing large numbers of people to find them.

While the physicists in the SRI program were focused on blindness, randomization, appropriate statistics, Swann’s attention was on the viewer’s experience. Beginning in 1978 he tried to define the order of sense impressions in an attempt to formalize the subjective viewing experience. He convinced the Army to fund this effort, and from that arose the Ft. Meade program, known best as STAR GATE. Swann trained six men, both officers and NCOs, in his technique which he called Controlled Remote viewing, or Coordinate Remote viewing (CRV). The project was classified and unknown to the science community at the time; 30 years later this training program would have a tremendous effect on what remote viewing has become. I will talk about that in the IRVA section below. What is important here is that with the exception of one small study, there is no evidence that CRV actually improved results, and considerable reason to believe it does not. It is overly analytical—“Analytical Overlay” being the term-of-art. All the labs discovered that cognitive analysis is the equivalent of “static” impeding nonlocal awareness. None of the major viewers for any of the labs, including even Swann himself, used it, and it played no role in SRI’s peer-reviewed scientific papers.

What did influence SRI, as well as Mobius, was the development by the PEAR group of a new protocol involving the use of descriptor sets, a subject that will be discussed in the PEAR section.

While all this research was going on, the SRI program was repeatedly attacked by skeptics. In 1978 the SRI analysis protocol was attacked by Jerry Solvin, Ed Kelly and D. Burdock on statistical grounds.³¹ That same year, P. Diaconis published a far more prominent critique that appeared in *Science*.³² In 1981 David Marks published, in *Nature*, “Sensory cues invalidate remote viewing experiments.”³³ The quality of this criticism is itself worth noting. The Solvin, Kelly, Burdock criticism was well thought through. It had to do with the statistical approach, and the SRI group considered it and made some changes. The Diaconis criticism was less helpful because it didn’t seem to understand the

protocol. The Marks criticism about sensory cues obviously did not properly grasp the randomization and blinding steps, nor the implications of precognitive remote viewing, where no target has yet been selected when the session data is collected. Such criticism took up a great deal of time, but ultimately didn't prove very useful.

In July of 1982, Russell Targ left the program to re-enter his original research specialty in laser physics to work on wind shear that threatens aircraft landings. But he maintained his interest in nonlocal perception research, and with Tony White founded Delphi Associates, a profit making company. They made interactive video games for Atari, and did market forecasting using an Associated Remote viewing (ARV) Protocol that I designed in 1976. I will cover this aspect of his research in the section on ARV. He also started Bay Research Institute, a non-profit that continued until 2010. Having co-authored a book with Puthoff, *Mind Reach*,³⁴ and a second with Puthoff and Tart, *Mind-at-Large*,³⁵ Targ has gone on to write several more, most recently, *The Reality of ESP*.³⁶

Hal Puthoff left the program in August of 1985 to found the Austin Institute for Advanced Studies, where he focused on zero point energy, a long time interest of his.

Edwin May took over the directorship of the lab in 1985, and although not as well-known in the popular media he ran the program for over a decade, and a great deal of the research for which the SRI/SAIC lab became known occurred on his watch.

May's period of leadership represents a second chapter. When Targ and Puthoff began they seemed, at least in their public statements, to be unclear if there was a legitimate phenomenon to study. Their original papers are couched in cautious language. By the time May took the helm, the issue of "can this stuff be real?" had been settled in all their minds, and May began from the premise that remote viewing was a genuine phenomenon and chose to focus instead on how it worked, and how assessment of the data could be improved. He would soon also stop using the term remote viewing, speaking and writing of it as Anomalous Cognition or AC.

In 1988, May and English mathematician James Spottiswoode, who had come to America to work on a Mobius project, met and formed an unusually productive collaborative partnership. One of the first things they looked at together, because Spottiswoode was already deeply involved in this area of research, was the effect of geomagnetic activity on an individual's ability to open to nonlocal awareness. In the Geomagnetic, Local Sidereal Time section below I will go into this important research.

Charles Honorton at the Psychophysical Laboratory, who had begun the Ganzfeld Protocol, first recognized the inherent problem in the rank order judging that had been used. Although the data was "free response"—that is, viewers could express their sense impressions and knowingness during the session as they wished—by reducing the decision process to rank ordering it reduced analysis to a simple forced-choice decision. By definition such a decision process meant only a tiny amount of the data was actually objectively assessed.³⁷

The research community was following the PEAR group's ongoing attempts to address this using various kinds of descriptor sets. A location target was defined by a set of descriptors. Prominent features like waterfalls, vegetation, mountains, islands, were defined as descriptors. A viewer could be asked to fill out a list after doing a viewing, or a researcher could enter the data. It allowed the use of computers and reduced the number of points in an experiment where subjective assessment occurred which could, conceptually, influence the outcome. May began thinking about other ways judging could be done, and in consultation with Utts developed a protocol using fuzzy set mathematics. In 1990 this work was presented in a paper in which they used the new fuzzy set analysis approach. They reported, "To apply the analysis in its present form to a long RV series is quite labor intensive and, from the results... is most likely not justified since this fuzzy set technique approximates human assessment."³⁸ PEAR would come to a similar conclusion which I will discuss in the PEAR section below.

SRI's lab research contract with the Army came to an end in September 1989. The institute's management were unwilling to carry the project on overhead and the program closed. May did not give up, however and, after several months of fund raising he found \$4.6 million in new funding as well as a new home for the lab with an even larger and more powerful California research institute, the Science Applications International Corporation (SAIC), that worked largely for the defense and intelligence communities, and the corporations that serviced them.

In 1991, Jessica Utts undertook to evaluate all the remote viewing research that had been done under the auspices of either SRI or SAIC. Her stated purpose: "Research on psychic functioning, conducted over a two decade period, is examined to determine whether or not the phenomenon has been scientifically established. A secondary question is whether or not it is useful for government purposes."³⁹

Utts reported: "In 1988 an analysis was made of all of the experiments conducted at SRI from 1973 until that time (May et al, 1988). The analysis was based on all 154 experiments conducted during that era, consisting of over 26,000 individual trials. Of those, almost 20,000 were of the forced choice type and just over a thousand were laboratory remote viewings. There were a total of 227 subjects in all experiments.

"The statistical results were so overwhelming that results that extreme or more so would occur only about once in every 10^{20} such instances if chance alone is the explanation (i.e., the *p-value* was less than 10^{-20}). Obviously some explanation other than chance must be found. Psychic functioning may not be the only possibility, especially since some of the earlier work contained methodological problems. However, the fact that the same level of functioning continued to hold in the later experiments, which did not contain those flaws, lends support to the idea that the methodological problems cannot account for the results. In fact, there was a talented group of subjects (labeled G1 in that report) for whom the effects were stronger than for the group at large. According to Dr. May, the majority of experiments with that group were conducted later in the program, when the methodology had been substantially improved.

“In addition to the statistical results, a number of other questions and patterns were examined. A summary of the results revealed the following:

“1. ‘Free response’ remote viewing, in which subjects describe a target, was much more successful than ‘forced choice’ experiments, in which subjects were asked to choose from a small set of possibilities.

“2. There was a group of six selected individuals whose performance far exceeded that of unselected subjects. The fact that these same selected individuals consistently performed better than others under a variety of protocols provides a type of replicability that helps substantiate the validity of the results. If methodological problems were responsible for the results, they should not have affected this group differently from others.

“3. Mass-screening efforts found that about one percent of those who volunteered to be tested were consistently successful at remote viewing. This indicates that remote viewing is an ability that differs across individuals, much like athletic ability or musical talent. (Results of mass screenings were not included in the formal analysis because the conditions were not well-controlled, but the subsequent data from subjects found during mass-screening were included.)

“4. Neither practice nor a variety of training techniques consistently worked to improve remote viewing ability. It appears that it is easier to find than to train good remote viewers.

“5. It is not clear whether or not feedback (showing the subject the right answer) is necessary, but it does appear to provide a psychological boost that may increase performance.

“6. Distance between the target and the subject does not seem to impact the quality of the remote viewing.

“7. Electromagnetic shielding does not appear to inhibit performance.

“8. There is compelling evidence that precognition, in which the target is selected after the subject has given the description, is also successful.

“9. There is no evidence to support anomalous perturbation (psychokinesis), i.e. physical interaction with the environment by psychic means.”⁴⁰

Then Utts took it a step further and compared the SRI/SAIC work with the results reported by the labs that had used the Ganzfeld Protocol and found, “The largest collection of ganzfeld experiments was conducted from 1983 to 1989 at the Psychophysical Research Laboratories in Princeton, NJ. Those experiments were also reported by separating novices from experienced subjects. The overall effect size for novice remote viewing at SRI was 0.164, while the effect size for novices in the ganzfeld at PRL was a very similar 0.17. For experienced remote viewers at SRI the overall effect

size was 0.385; for experienced viewers in the ganzfeld experiments it was 0.35. These consistent results across laboratories help refute the idea that the successful experiments at any one lab are the result of fraud, sloppy protocols or some methodological problem and also provide an indication of what can be expected in future experiments.”⁴¹ Equally important, the comparison made it clear that protocol was not the determinant, and that there were many ways individuals could open themselves to nonlocal awareness.

REMOTE VIEWING AND GANZFELD REPLICATIONS			
Laboratory	Sessions	Hit Rate	Effect Size
All Remote viewing at SRI	770	N/A	.209
All Remote viewing at SAIC	455	N/A	.230
PRL, Princeton, NJ	329	32 percent	.167
University of Amsterdam, Netherlands	124	37 percent	.261
University of Edinburgh, Scotland	97	33 percent	.177
Institute for Parapsychology, NC	100	33 percent	.177

From Utts

In 1992, May, collaborating with Nevin Lantz and Wanda Luke, took the trouble to definitively put to bed the Sender Model, basically an extension of the Telepathy Model, i.e. considering the nonlocal perception as a walkie-talkie process requiring a sender, signal, and receiver. This view that had once dominated thinking in parapsychology, until the Deep Quest experiment in 1977, described in the Mobius section below, rendered it highly improbable as an electromagnetic phenomenon. But the sender, signal, receiver model itself had lingered. The question was: “whether a sender is necessary for Anomalous Cognitive information transfer, and whether AC performance differs when the targets are static photographs or dynamic materials, such as video tape.”⁴²

May and his team were trying to learn two things at once in a single remote viewing study. First, to what degree is a sender necessary? In essence to end the telepathy argument. Second, does the target type matter? Specifically is there a difference in outcome statistics if the target is a static photograph or a dynamic moving video? They found the same result regardless of the sender condition, which showed that a sender is not necessary for high quality remote viewing. They used a statistical analysis of variance (ANOVA) to tease out the various outcomes from the study. First, they discovered that regardless of the sender condition – whether there was one or not -- the result was independent of the target type. There was no significant interaction between sender condition and target type. As a result they could study target type by using all the data regardless of sender condition for a total of 100 trials. Focusing on the static targets alone they found a sum of ranks of 265 (i.e., chance is 300) which corresponded to an effect size of 0.248 ± 0.100 corresponding to a p-value = 0.007.⁴³

Along with my co-researcher Rand De Mattei, Mobius carried out two mass nonlocal perception tasks, one precognitive, one about remote viewing, accompanied by a complex of personality questions. The surveys were offered in OMNI Magazine in 1980 and 1981. I will say more about this in the Mobius section. Here it is enough to say that 23,000 responses were received, each of which got an individualized response describing their accuracy and their personality profile. From the analyses two things previously unconsidered were suggested: that targets had informational entropy in them and the greater the entropy the easier it was for a viewer to perceive them, and that individual acts of intentioned observation, particularly when an individual was in a heightened state of emotion, made targets information richer and, thus, easier to perceive.^{44,45}

A second target approach was presented by Caroline Watt at the University of Edinburgh. She went through the literature working out what the research was saying about the nature of targets. She concluded that the most easily perceived targets were those that had emotional impact or that somewhere in the target image something dramatically stood out.⁴⁶

In 1992 and 93 May, again working with Spottiswoode and Christine James, looked at this same issue but in a third way. He saw a way to formalize it through Information Theory and Shannon Entropy. They were looking for some informational descriptor of a target that was “independent of psychological factors, and can be associated solely with a physical property of the target.”⁴⁷ They asked: is there some intrinsic informational property that could be defined? They carefully worked out an approach to calculating the entropy gradient of a target, and after testing targets against each other they proposed, “that the average total change of Shannon’s entropy is a candidate for an intrinsic target property.”⁴⁸

They found “a significant correlation ($r_s = 0.337$, $df = 31$, $t = 1.99$, $p \leq 0.028$.) with an absolute measure of the quality of the anomalous cognition (AC). In addition, we found that the quality of the AC was significantly better for dynamic targets than for static targets ($t = 1.71$, $df = 36$, $p \leq 0.048$)”⁴⁹

It was a major breakthrough in conceptualizing and assessing targets.

The following year, in 1995, SAIC’s contract was not renewed, and the lab closed. But the program did not. The Laboratories for Fundamental Research (LFR), and the Cognitive Sciences Laboratory (CSL) within it, had already been established, and May took the program to its third home, ending the long association with the military-intelligence world. This third period has been a very productive time, particularly his collaboration with James Spottiswoode.

In 1995, the U.S. Congress commissioned the American Institutes for Research (AIR), a Washington, D.C. based not-for-profit think tank with a long history of work in human performance and close government ties, to assess the reality of Remote viewing in research the U.S. government had previously funded.

To make the assessment, AIR selected Jessica Utts because she was universally acknowledged to be an expert in assessing nonlocal perception data. They also asked well-known skeptic Professor Ray Hyman, a psychologist on the faculty of the University of Oregon and a fellow of the Committee for the Scientific Investigation of Claims of the Paranormal. Both had previously written on nonlocal perception and were notably sophisticated in the issues involved.

Hyman and Utts were each asked by AIR to produce an independent report by a fixed date. Utts complied, and submitted her report by the deadline. Hyman did not. As a result he was able to see her report before writing his own, and the approach he chose to take, when he did write, was largely a commentary on her analysis. To compensate for this inequity, AIR allowed Utts to write a response that was incorporated into the final document submitted to the Congress. It is in this unplanned form of exchange that the essence of the two positions is revealed.

Utts' initial statement is remarkable for its clarity. She says:

“Using the standards applied to any other area of science, it is concluded that psychic functioning has been well established. The statistical results of the studies examined are far beyond what is expected by chance. Arguments that these results could be due to methodological flaws in the experiments are soundly refuted. Effects of similar magnitude have been replicated at a number of laboratories across the world. Such consistency cannot be readily explained by claims of flaws or fraud.

“The magnitude of psychic functioning exhibited appears to be in the range between what social scientists call a small and medium effect. That means that it is reliable enough to be replicated in properly conducted experiments, with sufficient trials to achieve the long-run statistical results needed for replicability.”⁵⁰

Hyman responding to Utts' report wrote:

“I want to state that we agree on many... points. We both agree that the experiments (being assessed) were free of the methodological weaknesses that plagued the early... research. We also agree that the... experiments appear to be free of the more obvious and better known flaws that can invalidate the results of parapsychological investigations. We agree that the effect sizes reported... are too large and consistent to be dismissed as statistical flukes.”⁵¹

This is important because what Hyman, one of the more intelligent skeptical critics of Nonlocal perception research, is admitting is that the way in which the kinds of laboratory experiments described in this chapter are conducted, and the way in which they are analyzed, is no longer a matter for dispute. Remote viewing cannot be explained away as some artifact resulting from how the data were collected or evaluated. However, part of the difficulty in this debate is that professional skeptics really should be thought of as deniers, because they are unpersuaded by facts.

Here is Professor Hyman, in July 2002, almost five years later, speaking to a reporter from the *Austin American-Statesman*, who was unlikely to know that a government white paper like the AIR report even existed. Hyman said:

“The issue is, what kind of evidence do they have? I didn't see any science at all, any evidence they got anything right other than pure guesswork.” Even if Remote viewing worked, Hyman said, it would be too erratic to rely on. “People who believe it admit that only 15 percent of what Remote Viewers tell you is true, which means 85 percent is wrong,” he said, although where this statistic came from he did not mention, and it directly contradicts the published research, about which he knew, as well as his statement in the AIR report. It was an incredibly cynical comment for a statistically sophisticated person to make to someone who was not --15% per cent accuracy would not produce the effect size observed, and to which he had previously agreed.

But it is his concluding remarks that give an insight into the skeptic/denier mindset. He said, “You don't know which is which, so it's of no practical use.” If Remote viewing could be proved, “It would overturn almost everything we know in science.”⁵²

By this time, that was pretty much what the skeptics and deniers were left with. May, now working under the auspices of the CSL/LFR, after more than a decade took up his original fuzzy set work again, this time combining it with his Shannon Entropy target research.

Assisted by three of the viewers with whom he had worked for many years, one of them Joe McMoneagle, he put everything he had learned over nearly four decades into a new protocol.

Before he began the trials he “extended the fuzzy set approach by developing a statistical meaning for each *Figure of Merit* and used the resulting z-score as a confidence call.”⁵³ The “target pool used in this study was the current result of nearly 40-people-years worth of effort.”⁵⁴ In order to make the system available to other labs, the targets were all drawn from “the Corel Stock Photo Library of Professional Photographs. This library of copyright-free images was in digital form and was comprised of 100 images on each of 200 CD-ROM's. The details of how this photographic library of 20,000 images was culled to produce the current pool of 300 outdoor images that were arranged in 12 groups of five orthogonal categories can be found in the above reference.”⁵⁵

Six otherwise uninvolved individuals, “independently encoded each of the 300 photographs against the *Universal Set of Elements* shown in the table below, and a consensus was formed to create a fuzzy set representation of each image with regard to how each element in the table was *visually impacting* in the image.”⁵⁶

Universal Set of Elements

Buildings	Coliseums	Glaciers/Ice/Snow
Villages/Towns/Cities	Hills/Cliffs/Valleys	Vegetation
Ruins	Mountains	Deserts
Roads	Land/Water Interface	Natural
Pyramids	Lakes/Ponds	Manmade
Windmills	Rivers/Streams	Prominent/Central
Lighthouses	Coastlines	Textured
Bridges	Waterfalls	Repeat Motif

From May

Thus prepared, he then conducted 50 trials, using the three participants. There were two primary hypotheses for the study:

- “1) We will observe significant evidence for anomalous cognition.
- “2) Figures of Merit above the significance threshold will serve as a successful confidence call for the trial.”⁵⁷

It was to be a researcher- and judge-free protocol. Each session was precognitive. At the beginning of each trial the participant saw this phrase on the screen: “In about an hour, you will see a photograph on the computer. Please access and describe it now.” The only input May had was that he encoded the viewer’s session data into the fuzzy set program before the judging was done. All the analyses were carried out by the computer.

“The targets in the study were randomly selected from 12 groups of three orthogonal categories each.”⁵⁸ “We observed 32 hits in 50 trials (binomial $p = 2.4 \times 10^{-6}$, $z = 4.57$, $ES = 0.647$) and of the 12 confidence calls resulting from significant Figures of Merit, 10 were correct (Binomial $p = 4.70 \times 10^{-5}$, $z = 3.91$, $ES = 1.13$).”⁵⁹

Finally after more than a decade of work, combining everything he had learned May achieved his goal of being able to conduct computerized trials, obviating all the criticisms.

PEAR

Mundelein College developmental psychologist Brenda Dunne read the first Targ, Puthoff paper in *Nature* when it came out in 1974, and the next two in the IEEE journals in 1975 and 1976. These papers, particularly the 1976 one, made a major impression on Dunne and her colleague John Bisaha, and they decided to do a replication, using the same Outbound protocol employed by the Stanford team in their 1976 paper.⁶⁰

In the Spring of 1976, over the period of a month, she and Bisaha, working with two female volunteers, carried out her first remote perception study. One of the women did

two sessions and the other did six. Dunne was the monitor, and Bishaha coordinated the target selection and observed.

To create their target pool they asked five otherwise uninvolved individuals to pick targets in the Chicago area, and a sixth person went through them and created a target pool of 100.

Initially they used the same rank order judging protocol used at SRI but, after reading the Solfein, Kelly, and Burdick paper on preferential rank, they modified the procedure so that eight separate judges independently ranked the targets. The results were the sum of ranks assigned by the judges, 20, a significant figure $p < .008$ (one-tailed). “Four of the eight transcripts were ranked as 1, and the other four ranks were 2, 3, 5, and 6.”⁶¹

Dunne and Robert Jahn met in 1978 in St. Louis at the annual Parapsychology conference, where Dunne had gone to present her SRI replication study. Jahn was there because in 1977 he began a nonlocal perturbation study with undergraduates as participants involving micro-electronic Random Event Generators (REG); a study was still going on when they met but its success at that point had challenged his view of reality and led him to decide to seriously pursue research in what he called the “mind/matter” problem. Jahn and Dunne found they shared many interests, particularly how the analytical techniques for assessing data could be improved. Over the next year they stayed in touch and began thinking about a formal lab.

Even before PEAR was officially part of Princeton, Dunne moved from Chicago to New Jersey. It produced a remarkable scientific partnership, unique in modern nonlocal consciousness research. Thirty five years later, now under the auspices of the International Consciousness Research Laboratories, they are still doing research and publishing books on their ongoing research and what it means.⁶²

Starting a consciousness research lab at Princeton was not as easy as they thought it would be. There was substantial resistance in some quarters. But by June 1979 the lab was authorized, with Jahn as its head, and Dunne as the Laboratory Manager. They deliberately gave it a non-parapsychological engineering name, the Princeton Engineering Anomalies Research Lab. The acronym was PEAR. In a wonderful burst of Jungian synchronicities, the debate over the name took place over lunch at a restaurant. And it was only after they had decided on the name that they realized the salt and pepper shakers on the table were pottery pears. The house salad that came with lunch had pears in it. And the desert menu promoted as the day’s special desert, pear cake.⁶³

Before considering PEAR’s program it is important to say something about Robert Jahn and just the existence of the lab, because it is a factor in this history. Unlike the SRI physicists, who came out of industrial science, or myself who had come out of government, Robert Jahn was a nationally recognized physicist, Dean of the School of Engineering and Applied Science at Princeton University, Professor of Aerospace Sciences, and Director of a major research program in advanced space enterprise. The fact that a senior scientist of his stature chose to establish a nonlocal consciousness

research lab in a hard science school at one of the most prestigious universities in the world was a phenomenon in itself. It changed how the field was viewed.

From the very beginning the PEAR lab took an engineering approach to their research and, while perfectly friendly towards parapsychologists and the Parapsychological Association, by their actions made it clear they were speaking to mainstream science. Their choice of terms, eschewing the old ESP language, said it, where they chose to publish said it, and perhaps most clearly of all in 1981 the PEAR lab team in conjunction with a number of other scientists established the Society for Scientific Exploration, an interdisciplinary organization in which the parapsychological was but one area of interest.

To help them, Jahn and Dunne in 1980 recruited experimental psychologist Roger Nelson, and a short while later a graduate student in theoretical physics, York Dobyns. This team would stay together for the next quarter century, and it is this stability that is one of PEAR's strengths. It gave them the ability to pursue a research vector for years, decades, if need be.

Although Dunne had been working with nonlocal perception, the lab's initial interest was, and continued largely to be, the "scientifically rigorous, empirical and theoretical study of the anomalous interactions of human consciousness with random physical processes."⁶⁴ Dunne, and her results, however, expanded Jahn's interest to include nonlocal perception research. And from the beginning they focused on the analysis side of the equation, publishing a first paper proposing a new approach in 1980.⁶⁵ But the paper that really brought PEAR's existence to science's attention was published two years later by Jahn: "The persistent paradox of psychic phenomena: An engineering perspective," in the Proceedings of the IEEE.⁶⁶ Here was a major American scientist in a major journal telling his mainstream colleagues they weren't paying proper attention.

Rather than using target images, as both SRI, Mobius, and others did, very early on the PEAR team settled on the Outbound Protocol in two forms. First, "In its basic form, the PEAR Protocol requires a percipient to describe an unknown remote geographical target where an agent is, was, or will be situated at a prescribed time. The target location is selected randomly before each trial from a large pool of potential targets, prepared previously by an individual not otherwise involved in the experiment. The contents of this pool are stored in separate sealed envelopes, randomly numbered and maintained so that no agent or percipient has access to them. Prior to a given trial, the target is designated by generation of a random number that identifies one of the envelopes, which then is delivered, still sealed, to the agent, who opens it and follow the instructions to locate the target."⁶⁷

The second variant was what they called a "volitional" protocol in which the Outbounder's location is described at an agreed upon time.

What mattered particularly to the team was alleviating what they saw as the shortcomings of the subject rank ordering used at SRI/SAIC and Mobius in its experiments where a statistical outcome was the desired end outcome.

To eliminate subjective assessment they began by developing a 30 item descriptor list that could be used to define each target. When session data were evaluated a researcher would answer “yes” or “no” as to the presence of that descriptor in the session data. There was also a unsure box. This allowed them to write computer algorithms that could “provide numerical evaluation of the thus-specified information content of any given trial and, once scored, the statistical merit of the perception results could be evaluated by an assortment of computerized analytical ranking procedures.”⁶⁸

In 1992, George Hanson, Utts, and Betty Marwick published in the Journal of Parapsychology a severe critique of the PEAR remote viewing experiments. The criticism dealt with “problems with regard to randomization, statistical baselines, application of statistical models, agent coding of descriptor lists, feedback to percipients, sensory cues, and precautions against cheating.”⁶⁹ A PEAR team headed by York Dobyns presented a very strong push back.⁷⁰ But history would reveal the final truth. As May would observe years later, “Post hoc analyses of effect sizes appear to show that obvious flaws in the protocol may not have mattered.”⁷¹

Over the years this descriptor approach would morph into five variants:

- Method A: The number of descriptors answered correctly, divided by the total number of descriptors (i.e. a count of the numerical fraction of correct responses, ignoring the *a priori* descriptor probabilities.)
- Method B: The sum of all descriptors answered correctly, each weighted by the reciprocal of its *a priori*.
- Method C: The same numerator as Method B, divided by the total number of descriptors, normalized by the “chance” score derived from the *a priori* probabilities.
- Method D: The sum of all the descriptors correctly answered “yes,” each weighted by the reciprocal of its *a priori* probability, plus the unweighted sum of all descriptors answered “no,” the total divided by the sum of all descriptors labeled “yes” in the target, each weighted by the reciprocal of its *a priori* probability, plus the unweighted sum of all descriptors labeled “no” in the target, with the resultant score weighted by the highest possible score for that target. (This process effectively removed from the calculation those descriptors on which the percipient responded negatively, whether correctly or incorrectly, and thereby served to counterbalance use of a negative response to imply ignorance of the descriptor, rather than its explicit absence.)
- Method E: The same numerator as Method D, divided by the total number of descriptors, i.e. by the “chance” score.⁷²

Using these five analytical methods 300 trials were carried out. They were grouped by experimental criteria. They found “the most instructive feature of these results is the consistency of anomalous yield across these five diverse scoring schemes. Overall

whatever the method used the results, although they differed somewhat across the trials, were all highly significant.

As time went on, 50 papers on this research would be published covering 353 more experimental RV sessions using variations of the original five “recipes” as they called them, until there was a total of 24 variants. The analysis of the now 653 trials yielded this: “Twenty-four such recipes have been employed, with queries posed in binary, ternary, quaternary, and ten-level distributive formats. Thus treated, the database yields a composite z-score against chance of 5.418 ($p = 3 \times 10^{-8}$, one-tailed).”⁷³

Further they concluded: “Numerous subsidiary analyses agree that these overall results are not significantly affected by any of the secondary protocol parameters tested, or by variations in descriptor effectiveness, possible participant response biases, target distance from the percipient, or time interval between perception effort and agent target visitation.”⁷⁴

Once again, consistent with the results from other labs, their research showed no evidence that the data was affected by either distance or time.

The problem with this approach however, became clear as they went along: there was a decline effect. r “[Over] the course of the program there has been a striking diminution of the anomalous yield that appears to be associated with the participants’ growing attention to, and dependence upon, the progressively more detailed descriptor formats and with the corresponding reduction in the content of the accompanying free-response transcripts. The possibility that increased emphasis on objective quantification of the phenomenon somehow may have inhibited its inherently subjective expression.”⁷⁵

As the years went by and their mathematical analysis “recipes” became more sophisticated the empirical results got weaker. “It appeared as if each subsequent refinement of the analytical process, intended to improve the quality and reliability of the ‘information net,’ had resulted in a reduction of the amount of rare [RAW?] information being captured.... We were forced to conclude that the cause of the problem most likely lay somewhere in the subjective sphere of the experience.”⁷⁶

When they queried their viewers the most common complaint they got was that trying to filter their free form nonlocal perception experience into the arbitrary categories imposed by the descriptors “constrained” them.

The lab closed when Jahn retired from Princeton, in 2007, but their partnership endured and as with May and the SRI/SAIC program their work did not end. Instead PEAR morphed into a membership organization, the International Consciousness Research Laboratories (ICRL), which Jahn and Dunne had set up nine years earlier. One of ICRL’s major programs is a unique educational youth program. It represents the long view, and in some ways it may be these educational activities that will have the longest lasting impact. Like Targ and me, in addition to their many formal scientific papers they have also become authors. Their first book in 1987, *Margins of Reality—The Role of*

Consciousness in the Physical World,⁷⁷ was followed by *Consciousness the Source of Reality*⁷⁸ and *Quirks of the Quantum Mind*.⁷⁹

Mobius

In this section I must speak in the first person, because this is my own research and it seems very stilted to speak of oneself in the third person.

Mobius began from a perspective different from the other labs'. The SRI and PEAR researchers started by asking the question, "Is this real?" I did not, because in 1966 I began what became a multi-year literature review of the entire field including, during the course of those years, reading all the Edgar Cayce nonlocal perception sessions. There are almost 15,000 of them, all essentially double blind outbound remote viewings. They were meticulously recorded by his lifelong secretary Gladys Davis, and are supported by tens of thousands of documents from doctors, lab tests, forensic evidence, witnesses and the people who were the targets themselves. It is one of the great shames of parapsychology that no one before me and no one after has bothered to study this data seriously. The reason, I suspect, is that it is all couched from a spiritual perspective, and spiritual language makes parapsychologists nervous for fear they will be criticized for being "new agey" and non-rigorous. But when one studies a body of data like the Cayce material, putting its syntax aside as a personal cultural response, as well as the long ethno-historical record of such experiences by others, and then compares it, as I did, with the formal experimental record, one realizes that spiritual experiences and nonlocal consciousness experiences are the same thing in difference contexts, using different language.⁸⁰

Edgar Cayce. (1878-1945), in terms of opening to nonlocal consciousness, is one of the most gifted individuals ever documented. Several times a day for over four decades he routinely provided extraordinarily detailed nonlocal perception information that was witnessed usually by several people and taken down in dictation. In the course of these thousands of sessions, what he called Readings, Cayce would discourse about anything, occasionally in languages and even dialects of languages he didn't speak.⁸¹

The requests for these readings and the feedback reports were mostly done through correspondence, and this taught me the importance of establishing a clear chronological documentation of events. A letter would come in requesting a reading, it would be scheduled, taken down by dictation, typed up, and sent to the target person by post including a request for feedback. Sometimes, in emergencies, there would be telephone calls, a record of which was kept. This extensive documentation went into an archives meticulously maintained day-by-day by Cayce's lifelong secretary, Gladys Davis (later Turner). Many were medical readings in which he nonlocally diagnosed, and provided treatment recommendations. An evaluation of the accuracy and validity of this information is beyond the scope of this chapter, but scattered throughout the thousands of readings I discovered hundreds of very straightforward remote viewing observations and the documentation as to their accuracy. I could even talk with people who had watched some of them happen, or who had been the focus of one of Cayce's readings. His son

Hugh Lynn, and secretary Gladys Davis, as well as others, spent hours letting me interview them. I began to call this Distant Viewing and in hindsight it is obvious that his observations were the same kind of sense impressions seen in the more rudimentary experiments going back to Warcollier, only greatly enhanced. Cayce was at the very far end of the bell curve, where the truly gifted are found.⁸²

As I studied this material it became clear to me that all Cayce's senses could be engaged. He could "smell" things:

Cayce Observation

- *"He's not here yet...he's still on a bus*
- *"...a wonderful smell of flowers..."*

Feedback Report

- *"At the time the Reading was scheduled he was stuck on the bus."*
- *"We had just opened his window and the smell of Jasmine filled the room."*⁸³

And, in addition to his sense impressions, Cayce had the sense of "knowingness" we see in remote viewing sessions:

Cayce Observation

- "Yes we have the body...quite a lot of body"*
- "Lovely pajamas..."*

Feedback Report

- "She is quite overweight, although how Cayce knew that I can not guess."*
- "She had on her new pajamas, with which she was very pleased."*⁸⁴

Sometimes Cayce literally had to guide people to find medications he wanted them to use. Here is one example: "...when a doctor in Kentucky took a reading for a patient with obstinate leg sores, Mr. Cayce (in Hopkinsville) prescribed Smoke Oil. The doctor had never heard of such a thing nor had any of the physicians and druggists he consulted.

"A second reading named a drug store in Louisville where the Smoke Oil could be found, but when the doctor wired for it the druggist wired back, 'Never heard of it.'

"A third reading explained that Smoke Oil was on a certain shelf in a back room behind bottles marked so-and-so. This time the manager wired, 'Found it.' The bottle was old and the company which made it was out of business, but the label said, 'Oil of Smoke' and it worked its cure."⁸⁵

This was quite a different world from the dice and card calling that made up a great deal of the formal academic research published in parapsychology up to that time, and thinking about that gave me the idea for what I called Distant Viewing. This view of nonlocal full sense impressions was buttressed by the ethno-historical and shamanic research I was reading about. By the time I was ready to begin doing experimental

studies, I was sure that nonlocal consciousness was real, and that it was possible to develop research protocols that could meet any measure of criticism. No matter the blindness or randomization it was possible to obtain objectively verifiable information sourced from the nonlocal domain. So when I began to think of doing studies, I wanted to answer three questions: How does it work? Can it be put to practical use? What is the data telling us about who we are and how our world works?

In 1966 I came across an interview with Max Planck, Nobel Laureate, and father of quantum mechanics. I thought then, and still think now, he framed it about as clearly as anyone could in an interview with the respected British newspaper, *The Observer*. Context is always important, and Planck understood very well that he was taking a public position, speaking as one of the leading physicists of his generation, through one of Britain's most important papers. He did not mince words: "I regard consciousness as fundamental. I regard matter as derivative from consciousness. We cannot get behind consciousness. Everything that we talk about, everything that we regard as existing, postulates consciousness."⁸⁶

In 1968, I began using a Distant Viewing Protocol, distilled from all my reading. I had created a grid with 16 squares outlined with rope in my back garden. I would bury things, give viewers a piece of paper with the grid marked out and ask them first to choose the square with the target and, then, describe the target, draw a picture of it, and make as detailed a description as they could. It allowed for a statistical analysis as to location and an accuracy rating on the sense impression concepts proffered. I wanted the statistical measure of outcome, but that was just the beginning. I began designing a protocol that would assess every concept proffered, so that statistical significance was just one of several levels of analysis.

In 1970 when I became Special Assistant to the Chief of Naval Operations (CNO), the central issue I was thinking about was: Is nonlocal perception an electromagnetic phenomenon? Two things happened at this time. A friend in the intelligence world, knowing of my interest, sent me some translations of Soviet research as well as a book, *Experiments in Mental Suggestion*, about work done in Leningrad (now St. Petersburg) at the Institute of Brain Research, by Russian physiologist and psychologist, Leonid Leonidovich Vasiliev (1891-1966).⁸⁷ Vasiliev had asked this same question I was asking, and had gone to great lengths to answer it. In 1932 the institute received an assignment from the Soviet government "to initiate an experimental study of telepathy with the aim of determining as far as possible its physical basis: what is the wavelength of the electromagnetic radiation that produces 'mental radio,' the transmission of information from one brain to another, if such a transmission exists."⁸⁸

Vasiliev looked at both nonlocal perception and perturbation, although he didn't use those terms. He would ask participants to focus on a target individual and to stimulate them in some way. He found that it worked. He would put people into caves, or mine shafts in Faraday cages so that the participants were shielded from most of *em* radiation, and ask them to write down images or letters, like the experiments being done concurrently between Paris and Warsaw by Nobel Laureate Charles Richet with Stefan

Ossowiecki as the participant viewer. To his very considerable surprise Vasiliev found that neither distance nor shielding made any difference in the quality of the nonlocal perception. He finally got it down to one part of the *em* spectrum—Extreme Low Frequency (ELF) (1-300Hertz). From ELF the only shielding that would work was to submerge the participant in a submarine in the sea, and he was unable to do that.

At the same time that I was reading this in 1970, I was briefed on Project Sanguine. The Navy had decided that ELF, precisely because it will penetrate at least some depth of water, was how they would communicate with the deep ocean ballistic missile submarines. They wanted the boats to stay as deeply submerged as possible so that Soviet satellites would not detect the heat bloom from the sub's nuclear reactor and, thus, locate it. So the question was: Exactly how deep into the ocean do ELF frequencies penetrate? To answer it they had spent millions of dollars. And millions more discovering that just a few numbers could be sent in a burst, because frequency also dictates the amount of information that can be transmitted. Project Sanguine gave me the piece of the puzzle Vasiliev did not have.

In the fall of 1972 I had occasion to fly to Groton, Connecticut, on Secretary of the Navy John Warner's aircraft. Also along for the ride was Admiral Hyman Rickover, the father of America's nuclear navy. I asked him if I could go aboard one of the boomers when she did her sea trials to complete Vasiliev's research. Rickover listened carefully, seemed interested, and said he would get in touch. A few days later he called to tell me he couldn't do it. "Senator Proxmire would have a field day if he found out about this. I'm sorry."⁸⁹ At the time Senator Proxmire was giving out what he called the Golden Fleece for government waste and stupidity.

Since submarines are not easily come by, that looked like the end of it; the question would go unanswered. It would be five more years until I could answer it.

By 1973, I had decided that I would do research in nonlocal perception using archaeology as an applications study. There was at this time considerable discussion going on in archaeology about how they could better address their central problem: Where to look? Many, in some areas most, of the finds being made were serendipitous. Having settled on archaeology I began doing research on every use of Distant Viewing in archaeology. It was surprising how much there was: Frederick Bligh Bond's location and reconstruction of the ruins of Glastonbury Abbey in Glastonbury England.⁹⁰ The extraordinary story of the research done by Poland's leading ethnographer, Stanislaw Poniatowski, and other archaeologists with chemist and remote viewer Stefan Ossowiecki, mostly done in secret during the Nazi occupation of Warsaw.⁹¹ Clarence Wolsey Weiant's discovery of the great Olmec Head, and many others. This research would become my first book, *The Secret Vaults of Time*.⁹²

This research led me to meet medical anthropologist Joseph Long, an Associate Professor at Plymouth State College in New Hampshire.

I began working with him, although I had to do it anonymous because I was still Special Assistant to the CNO, to organize a panel at the American Anthropological Association's annual meetings. Our idea was to present parapsychologists and anthropologists to each other. We called it the Rhine-Swanton Symposium. The Rhine for J.B. Rhine, of course, and Swanton because John Reed Swanton, anthropologist and Chief of the Smithsonian Institution's Bureau of American Ethnology, almost 30 years earlier had written an open letter to all of anthropology to tell them about what was happening in parapsychology, saying:

"A significant revolution which concerns us all is taking place quietly but surely in a related branch of science. It is not being met in an honest, a truly scientific manner. Adhesion to current orthodoxy is always more profitable than dissent but the future belongs to dissenters. Prejudice and cowardice in the presence of the status quo are the twin enemies of progress at all times and especially of that 'dispassionate method' in which science consist."⁹³

Like Robert Jahn's IEEE paper it was the statement of a very senior scientist telling his colleagues they were not paying attention to something important. To get a sense of how Swanton was seen in his field, it will help to know that on the occasion of his 40th year at the Smithsonian Institution a special collection of essays, written by the leading anthropologists from every sub-discipline illustrating Swanton's monumental contributions to all phases of anthropology, was published by the Smithsonian.

The conference we planned took place in 1974 in Mexico City, and the proceedings became a book.⁹⁴ But more importantly Norman Emerson, professor of anthropology at the University of Toronto, founding vice-president and former president of the Canadian Archaeological Association, and considered by many to be the "Father of Canadian archeology," decided to help Long and me create an interdisciplinary society whose purpose would be to study consciousness from an anthropological perspective. From that decision came what today is the Society for the Anthropology of Consciousness (SAC), now an integral part of the American Anthropological Association, and a journal.⁹⁵

Emerson also told me about some experiments he was doing with a Vancouver Island garage parts manager name George McMullen. Emerson had developed his own technique, very much like that used by Poniatowski and Ossowiecki, back in the '30s. He would give George an artifact and ask him to describe the people who created it, their life, and what the object was for and meant. Then as an archaeologist he would test this information, using the techniques of which he was an expert. He also introduced me to one of his graduate students, C.S. Reid, and I will use Reid's Master's thesis to give some flavor of what was going on in archaeology at the time.

In 1972, under the auspices of the Ontario Archaeological Society, Reid began searching for 1.1 acre village of Pickering branch Iroquois known as the Boys site. (CE 975 ± 120 years), as well as a larger 10 acre site known as the Sewell site, both within a total of about 50 acres—roughly the equivalent of only two residential neighborhood blocks. His first year he found middens and fire pits, but he could not find the palisades within which

the villages were located. He began the 1973 digging season under the sponsorship of McMaster's University for his Masters. Once again he found peripheral sites, but still could not locate the palisades. By May of that year, Reid was running out of time and funding and was desperate. He turned to Emerson, his mentor, for help. After listening to his problems, Emerson offered what he admitted was "a radical solution." Perhaps McMullen could help. Reid accepted the offer. On the 19th of May, Emerson brought McMullen to the search area. After acclimating himself for a few moments McMullen walked out over the fields, with a sack of stakes, and quickly located the palisade, the location of the gate in the palisade, as well as long houses within the enclosure. In a kind of running commentary he also described in detail the lives of the tribe, a culture that in many respects contradicted what Iroquois archaeology thought it knew.

Careful excavation revealed that in a little over two hours McMullen had done what two years of traditional survey techniques and excavation could not. His locations proved to be correct, and his reconstruction of village life was validated by the excavation results which changed archaeology's perception of these Iroquois.⁹⁶

My own experimentation under the auspices of Mobius began with the submarine study that came to be known as Deep Quest.

In 1976, two former colleagues, and the Navy's leading deep ocean experts, naval officers Donald Walsh (former Special Assistant to the Assistant Secretary of the Navy for Research and Development) and Donald Keach (former Deputy Director of Navy Labs) had recently retired and become the Director and Deputy Director of the Institute for Marine and Coastal Studies—University of Southern California. They offered me the chance to do the ELF experiment. Keach, who was himself a submariner and a recognized deep ocean engineering expert, because of his command role in the Navy's labs, had a much more detailed understanding than I of the Navy's ELF activities.

I showed him Canadian neuroscientist Michael Persinger's paper, of whom I will speak more below, in which he proposed nonlocal phenomena was an ELF phenomenon suggesting that what are known as Schumann waves/resonances (7-8 Hz) involving the earth's ionosphere, were probably the best explanation, since the Schumann waves have a wavelength of 38,462 km, essentially equal to the earth's circumference.⁹⁷ Keach didn't think this could possibly be correct since he could not reconcile my descriptions of the data that came from a remote viewing session, with all its sense impressions, with what ELF could achieve. Project Sanguine research had demonstrated that while ELF could penetrate seawater far deeper than any other form of radio wave, it required substantial power and extremely large broadcast facilities (on the order of antennas measured in square miles) requiring considerable amounts of power. How could that be reconciled with the electromagnetic potential of the human organism?

The very long (300 to 1,000 km) wave form was also a substantial factor to be considered in light of remote viewing session data. The central issue was that ELF could convey only a few bits of information in any functionally reasonable transmission time. The maximum bit rate dB/dt is equal to somewhat less than half the frequency. Just a few months before

our conversation a published paper showed a single letter, given an alphabet of 26 symbols, requires 4.7 bits (since $2^{4.7} = 26$). So a five letter word needs around 24 bits. Actually somewhat less will do, since all letters do not have an equal probability of occurrence. It has been calculated that a single visual observation requires at least 100 bits of data, and a simple geometric form about 60 bits.⁹⁸

In practical terms, this data transmission restriction led the Navy, even with its unique planned facility, to settle for very terse messages consisting of short strings of numbers. Indeed, the restriction was sufficiently pressing that existing orders books are kept aboard the missile submarines so that a string could be correlated with a previously prepared directive, for example: the number 37 means a particular target site.

I told Keach that in 1971 I was doing research on the battle tactics, in preparation for a speech for Admiral Zumwalt. Because the speech had to do with evolving naval tactics, I was trying to find a precursor battle I could use to make a point. Several days in the Library of Congress wading through accounts of battles had brought me to one of the epic battles of the square-rigged warships, the Battle of Abu Kir Bay, also known as the Battle of the Nile. It was fought over three hot sultry days, beginning the first day in August 1798, in a bay about 14 miles down the coast from the ancient city of Alexandria. It was the culmination of a two month search by British Admiral Lord Nelson, to find and destroy the fleet of Napoleon, commanded by Vice-Admiral François-Paul Brueys D'Aigalliers. French naval power was broken in that bay and in the end only four of the 17 French ships that began the battle would escape. As I read the accounts I realized that one of the central problems Nelson faced was how to communicate with his ships once the battle had begun and the ships of the line were spread out across miles of the Mediterranean Sea. The admiral often couldn't see the whole line of ships, so he used frigates and smaller ships that cruised up and down the line during a battle. The messages, of necessity, had to be reduced to a few colored flags giving the ship's number and an encoded command. But by associating a flag, or small group of them, with previously agreed-to complex messages, it was possible for the battle commander to transmit and receive messages.

Keach made the connection; this was precisely what Project Sanguine was designed to do using ELF. The Navy had created Order Books, in which the transmission 123 was associated with a specific target action. As we talked about it we asked ourselves: through Deep Quest, while studying the validity of the archaeological and ELF experiments, could we also explore a communication through an associational referent just as Nelson had done, and Sanguine was doing?⁹⁹

If a remote viewing experiment could be carried out successfully while the submarine was suspended in the ocean, then the image, like Nelson's flag command, could also stand for a number as in the Navy's submarine order book scheme. This suggested a possible line of research addressing headquarters to submarine-on-station communications. I thought about it and said we could do outbound experiments, and depending on where the outbound targets went we would associate that with an action. That is the original concept of ARV.

Through the generosity of Keach and Walsh and the team from International Hydrodynamics Company Ltd. (HYCO), who necessarily had to agree to take part, and who had built and were manning the five-person deep ocean craft, consciousness research was finally able to answer the electromagnetic question. This was Mobius' first experiment. It had three purposes:

- 1) Answer the question as to whether Remote viewing was electromagnetic in nature through accomplishing two tasks:
- 2) Send a message by associating a correctly described target with a specific message.
- 3) By employing consensual concept analysis nonlocal perception protocol, to locate, describe, and reconstruct a previously unknown marine archaeological site on the sea floor.¹⁰⁰

If viewers could locate, describe, and reconstruct a previously unknown site on the sea floor, it would be hard to explain it as electromagnetic because the depth of seawater precluded all *em* signals, including ELF. If viewers could be suspended at a depth greater than ELF penetration, as established by Project Sanguine, and successfully perform an outbound RV session, ELF would also be precluded.

The protocol called for each viewer to be sent a standard sea chart and two opaque envelopes marked "Question One" and "Question Two." They were asked to record their answers, and return the tape with the marked chart and any drawings or written comments they had made.

The first question was: "Please locate a previously unknown wreck on the sea floor. Mark its location as tightly as you can. If you choose to make more than one location please do the same numbering them 1, 2, etc. Only when you have finished making locations open envelope #2."¹⁰¹ On the paper in the second envelope the question was: "Please go to each site you have located and describe in as much detail as you can what will be found at this site, and how it came to be there."¹⁰² As I was planning Deep Quest an acquaintance in the CIA sent me Puthoff's and Targ's 1976 IEEE paper, and I discovered that there were others who thought as I did. Then, when I moved from Tucson to L.A., I met Ingo Swann, and though him Puthoff, Targ, and May. I invited them to participate in Deep Quest and explained my idea for Associated Remote viewing. They immediately agreed, and I asked Swann and Hammid to be viewers, along with Canadian George McMullen.

The maps came back and were given to Commander Bradley Weeks, Associate Director of the IMCS, a submariner, and an accomplished navigator. He created a master map upon which all the locational data was compiled. Each map had several locations, but one location was agreed to by all. It was also close enough that we could make the location in a day's dive, which was as much of our three days as I could allot. From a search area of about 3,900 square kilometers the viewers had selected an area of about 81 by 108 meters. This tiny area lay about a kilometer and a half off of Blue Cavern Point.¹⁰³

There was also a wealth of detail describing a sailing ship with a high pressure steam winch on deck that blew up, and set fire to the ship, which sank in place. The winch, a Y-shaped artifact, and the stern wheel of the ship were specifically described. There were 667 concepts proffered, in addition to the location. All of this material except the master map was notarized and turned over to Anne Kahle, a senior scientist working in satellite surveillance at the Jet Propulsion Laboratory. Otherwise uninvolved with the experiments, her job was to retain the records so that an unimpeachable chronology of prediction was established. The experiment was precognitive and triple-blind. To further document what happened the entire project would be video-taped and photographed. Also it would be witnessed by a dozen men, completely uninvolved, and in some cases not really interested in the nonlocal consciousness research. Their business was taking scientists into the deep ocean so they could measure or see something. For them this was business as usual.

Our first assessment of the data was their view, and it was not encouraging. The *Taurus* crew had about 30 days of diving time searching around Catalina island in exactly the area the viewers had pinpointed. They reported there was actually very little debris, and nothing “remotely like what the viewers are describing.”

The night before the dive, Hammid felt compelled to log a final session, with Kahle and myself. She saw a large block of stone at the site, granite she thought, and she had made a drawing of it from the angle she “saw” it at in her mind.

The day of the archaeological dive we wandered around hovering over the sea floor but could not establish our position relative to the target. So we brought Swann aboard for viewing direction, and requested a radio homing device known as a pinger be dropped from the surface support boat, directly over the location. We homed in on its signal, got some fine tuning from Swann, and there everything was. We brought up samples for analysis to test the reconstruction the viewers had provided, and took pictures of the site.

Just on the basis of what we had seen, and the accuracy of the location, it was clear viewers had obtained detailed triple-blind precognitive information concerning the locale and description of a marine wreck site. We calculated viewers had offered well over a 1000 bits of data each during the data collecting sessions; McMullen from Nanimo, British Columbia; Swann from New York City; and, Hammid from Los Angeles.

The next day we tested the ARV protocol. May and I had worked it out over several weeks. Because Hammid, Swann and May had all worked together, I felt they had the best chance of being successful. So I asked May to do the sessions, and we designed two basic outbound experiments.

The first session was conducted with Hammid, submerged at 558 feet (170 m), hovering over a bottom that was 1116 feet (340m). In the electromagnetic isolation provided by the titanium pressure sphere and the surrounding seawater, Hammid was asked by May to

describe where Hal and Russell were—a place selected randomly by a computer *after Taurus was out of radio contact and underwater.*

She closed her eyes for a moment, then said in a rush:

“A very tall looming object. A very, very huge tall tree and a lot of space behind them. There almost feels like there is a drop off or a palisade or a cliff behind them.” Then she stopped.

May then broke open a sealed envelope. In it was another envelope with a list of six sites, possible targets unknown until then to either himself or Hella. She was asked to select the one she thought she had seen. No one at our end, of course, had any idea which was the correct target, only that one of them was. One of the targets on the list was described as a large tree in the Portola Valley in Northern California. A large tree that stood on the edge of a cliff.

Without hesitation she picked it.

Hammid was replaced by Swann and the process was repeated, and his session and choice would also prove to be a first place match, easily made. None of this could be explained by ELF.

But it was not with ELF but what happened a few days after we returned from Catalina that fixed ARV in people’s minds.

I decided to use ARV to win a trotters horse race a few days later. May would be the monitor for Hammid, and I would be the monitor for the young woman who had shot the film record, Neddie Pena. She had never heard of remote viewing until our three days on the island, and had never done a session. We needed at least a six horse race for the statistical analysis. There were several on the day we were going to predict, and we randomly chose the sixth race at Hollywood Park.

Each team of viewer and monitor was given the same task: “Go forward in time until tomorrow at 4:30 p.m. You are life-size, and you are standing somewhere.”¹⁰⁴ Whatever they said they would be taken later to the site of the winning horse’s associated target location.

On the basis of the viewings we chose the sixth horse in the sixth race, went to the track, bet \$2 and, because the horse won, we won \$14. That linked ARV to money with which it has been associated ever since, as I will explain in the ARV section below.

The ELF question was settled almost immediately. It would be lovely to replicate it but it seems unlikely to ever happen, given the scarcity of deep ocean submersibles, and their cost of operation. One thing is certain: no ELF communications expert could ever explain what happened.

It took longer to assess the archaeological section but when it was done it was clear it, too, had been successful.

The target area equaled a rectangle 80 x 108 meters, which is .00864 square kilometers. It was located in a search area that was 3900 square kilometers. That meant if the search area was overlain with a grid made up of rectangles the same size as the target area there would be 451,389 equal-sized rectangles in the grid. The wreck is unique, not because of its unknown location, but because the whole complex of remote viewing location and reconstructive material is as distinctive as a finger print. That is the thing about wrecks. Nature makes them unique; two ships of the same class that sank in different locations, 50 years later would be very different, and would produce different viewing data. To obtain a statistical measure for the probability of finding the location, what is the chance of locating the one correct grid box out of 451,389 similar sized boxes? It turns out to be very improbable to do this by chance $p = .000,002$.

A critic might say that perhaps the wreck was mistaken for another. Thomas Cooke, marine sites expert for the Bureau of Land Management (the government agency charged with keeping track of marine wrecks), analyzed the site and all their records and sent me this: "Based on an intensive study of the sites in southern California waters, I must conclude that the area selected by Schwartz' psychics was previously unknown and could not have been found by going through old papers, books at the library, or that sort of thing."¹⁰⁵

This is critical because along with the depth of the site, it rules out anything but remote viewing as the source of the location and descriptive information.

When Cooke was interviewed on camera for the documentary on *Deep Quest* he expanded on this saying that, "there are 1653 known wrecks along the Southern California coast," and that the wreck we had found "is not one of them."¹⁰⁶

In addition to the Marine Sites Board, and the Taurus crew's search of the area, further research revealed there were also other earlier surveys using various electronic technologies. Because of the presence of the Institute, these are amongst the most carefully explored waters on the American West Coast. None of them showed this wreck or anything near this wreck.

As to the descriptions of the wreck and what would be found there, a critic might also say, a kind of generic ship description would cover most wrecks. In fact this is also a statement of ignorance. No two wrecks, even ships of the same class, sink in exactly the same way, nor do they look at all similar after a few years on the sea floor, let alone after nearly a century, as was the case with this wreck. The RV descriptions were very detailed and specific to just that wreck as I have tried to indicate.

It takes time to fully assess and applied remote viewing project like this, and almost a year would elapse before the final chapter of *Deep Quest* was closed. It began with Witcombe's report. Going back through the logs and after carefully examining the pictures of the site and the objects found, he and Al Trice, the senior officer of the Taurus

crew, concluded that the ship sank “by burning and blowing up amidships. By distribution of wreckage it is clear that this ship did not just settle to the bottom. She appears to have suffered an explosion amidships, probably owing to fire, since some of the wood shows charring and, only then to have sunk.”¹⁰⁷ It was point-by-point validation of the viewers’ nonlocal perception reconstruction of those events.

A USC marine archaeologist, who asked to be anonymous, examined the photos and told me, “This winch was almost certainly steam-powered. At this time ships had on-deck high-pressure steam engines. The technology was primitive, and in the early days before they got a handle on it, these engines would blow up. I suspect the engine blew up, and that caused the fire.”¹⁰⁸

Based on the rusted fittings, the winch, and the other objects, he placed the dates almost exactly the same as the dates proposed by the viewers—80 to 95 years. Again a validation of the remote viewing data. He also provided a possible explanation for the presence of the granite block described by Hammid.

“When San Francisco was expanding, ships plying the coastal trade would bring up these big blocks of granite from quarries in the south. They were carved up for lintels and stoops to adorn the newly affluent city.”¹⁰⁹

Keach helped me arrange for a metallurgist to examine the recovered metal fragments. Using X-ray excitation, Scott Hubbard, an expert in the field working at the University of California-Berkeley, reported back to me: “We cannot say anything absolutely conclusive, but there is highly suggestive evidence, based on the lack of chromium [present in all steel smelted by modern processes], that this metal was produced at least 75 years ago.”¹¹⁰

A third fix on the date came from the encrustation on the retrieved items. Marine organisms grow at a known rate, and the over-one-inch thickness found on several artifacts, including the Y-shaped object, shows they have been underwater for many decades. Similarly the growth of seaweed that intertwined the objects assures they have lain undisturbed for years.

This multi-disciplinary evaluation approach involving scientists with long experience and expertise seemed to me the only way an experiment could be done such that a full assessment of the session was accomplished. When a viewer says, “I have a sense of metal attached to wood. It’s shaped like this (makes a drawing). I have a sense of an explosion, fire, a noise... loud, this ship caught fire. That’s why it sank.” You have four simple sentences, but broken into concepts, we coded them from the first concept of the first viewer in chronological orders, R1:1, to the last concept of the last viewer R3:667, which looks like, R1:1: explosion, R1:2: fire, R1:3 noise, R1:4 loud, and so on. From this, patterns of consensual imagery or low a priori observations emerge. Each of these concepts may require a different assessor. This became an integral part of the Mobius Consensus Methodology. Deep Quest also set the tone for two other things: The projects were necessarily done in a very public way witnessed by many people. Every aspect of

the project was meticulously documented, and time and date coded. Databases, paper records, audio tapes, video tapes, still photos, all tracked the process. And a notarized copy of the data was turned over to an independent third party so the chain of chronology was absolute.

In Deep Quest, the three viewers proffered 667 concepts. Based on the metallurgical, marine biologic, and wood analysis the concept accuracy evaluation was:

Concept Analysis—Deep Quest

	Total # Concepts	Correct	Partially Correct	Incorrect	Can't be Evaluated
Viewer 1	179	139/78%	9/5%	11/6%	20/11%
Viewer 2	285	201/70%	27/9%	23/8%	34/12%
Viewer 3	203	157/77%	9/4%	11/6%	26/13%
TOTAL	667	497/74%	45/7%	45/7%	80/12%

Over the next 17 years this basic approach—using a consensus methodology involving multiple viewers, precognitive targets, and a concept-by-concept analysis to develop hypotheses that later guided fieldwork, whose success was evaluated and witnessed by independent authorities—would be repeated over and over.¹¹¹ I wanted people to talk about what the results told us about the nature of consciousness, not argue over whether it could have been faked.

To obviate criticism in the first place every Mobius experiment from the beginning was written up in what came to be called the Protocol and Hypothesis Document (P&HD) spelling out in minute detail (some of these documents were more than 100 pages long) what was going to be done, how it was going to be done, who was going to do it, what we were looking for, and how the data were going to be analyzed.

Before the study was begun this document was circulated not just to colleagues but to skeptics/deniers. For instance in our mass experiments Ray Hyman was sent a copy for criticism and the protocol was altered to incorporate his criticisms. I also decided that whenever possible a program of documentation involving time coded filming/videoing, taking still images, and making audio recordings of all aspects of these experiments, was carried out. This ongoing record of the data was notarized and turned over to a reputable uninvolved party, so that there was an unimpeachable chronology of events. Also as the study itself, as it was executed, it was witnessed by otherwise uninvolved third parties.

Beginning in 1978, Mobius began planning what became The Alexandria Project. The location, description, and reconstruction of Ptolemaic sites throughout Alexandria, Egypt. The project had two distinct components, terrestrial and marine archaeological sites. The terrestrial archaeology of the city had been documented for almost a century.¹¹² It was very easy to establish whether a site selected by the viewers was previously undiscovered or not. In the case of the Eastern Harbor no such literature existed. With the exception of one cursory diving report, there had been no survey either electronic or visual of the harbor seafloor. Thus, on both land and at sea the entire project was triple blind.

Prior to our going to Alexandria 11 viewers, and two on site, Hammid and McMullen, had consensually located, Alexander's Soma, a library site, a Byzantine cistern, and several other lesser sites. In the harbor they had located Cleopatra's Palace, a commemorative pillar, Antony's Timonium, the lighthouse, and a number of other lesser sites. There were eleven major experiments in this project including one that arose as a challenge from the University of Alexandria to prove to them remote viewing actually worked. I will touch on two, the Eastern Harbor and the location and reconstruction of a site in the buried city of Marea, on what was once the shore of Lake Mareotis. All of this is described in detail in several research papers^{113,114} and two books, *The Alexandria Project*,¹¹⁵ and *Opening to the Infinite*.¹¹⁶

With Marea, no map existed that could be used to do the normal map phase work.

So we had no choice but to simply drive to the edge of the search area, a little more than 40 kilometers from Alexandria, searching an area roughly 24 km on a side, approximately 576 square km (about equal to one half of the city of Los Angeles). In 100°F heat McMullen and I, followed by two camera men, audio recorders, walked out into the desert. We were trailed by an archaeological team who, at my request, walked about 30 feet behind us, so they could observe everything, but their comments would not be heard. They made it clear at the beginning that they didn't believe we could find anything. After several hours of walking McMullen picked a small area, and staked the building out, indicating where the corners and door were, saying it was buried three-to-four feet beneath our feet. Hammid would also describe the site, noting the presence of a strange column between two of the rooms. All this seemed laughable to the archaeologists, and made them even more sure we would find nothing. The University of Gelf had previously surveyed the site McMullen and Hammid had selected and nothing was there according to their instruments.¹¹⁷ Excavation began under the control of the university archaeologists and at between three to four feet the structure was revealed, not only was the site there it was as described. McMullen had been only 28 inches off in his stake out of the building, and Hammid's column was just where she described it.

The viewers went on to describe the history of the site, that it was Byzantine, and hundreds of details about what would be found, down to small mosaic floor tiles, red, black, and white, less than 2-inches across although McMullen made it clear these were just a few left-overs because the floor had been stripped out before the building was abandoned. Almost everything Hammid and McMullen said contradicted the archaeological state of knowledge concerning the area. In the concept evaluation of this project 28 per cent could not be evaluated, and of the rest, that could, 89 per cent of the material was judged to be correct by the archaeologists who did the excavation, and two other observer archaeologists, who also evaluated.

In the survey of the Eastern Harbor, months before going to Egypt, viewers were sent a British Ordnance Map reproduced by blue print so that all colors were removed because there was some evidence from other fields that people asked to perform a choice task tended to pick the colors they liked. The map was accompanied by a series of sealed

numbered envelopes, each of which contained questions such as: “Do you find Cleopatra’s palace to be within the area bounded by this map? If you do please mark the location as tightly as you can. After locating it, please describe in as much detail as you can all the sense impressions you have as to what will be found there.”

A master map was compiled from the eleven responses.

As with Deep Quest, to compare electronic remote sensing with nonlocal perception data, I invited Harold Edgerton, Chairman of the Radio Physics Laboratory at MIT, and the inventor of side-scan sonar to come to Alexandria and do a side-scan survey of the harbor. I wanted to see if these sites could be found using standard electromagnetic survey technologies like ground penetrating radar, side-scan sonar, proton precession magnetometer. Because of the heavy particulate matter in the water, he was unable to make any locations.

Using the location data developed through the Consensus protocol all the locations sought were made, confirmed at the time by a team of archaeologists, and revalidated by a French archaeological team over 20 years later.¹¹⁸

During the over two years of fieldwork, both terrestrial and marine, 13,346 concepts were proffered by the viewers. As we went along, and continuing after the fieldwork ended, these were evaluated by a team of archaeologists and anthropologists from the University of Alexandria, The Archaeological Society of Alexandria, and the University of Warsaw (which had the largest archaeological project then working in the city). Twenty eight percent of the concepts, 3,736 could not be assessed (things such as what people thought, or how they behaved at a particular time). The remaining 9,610 concepts broke out the following way.

The Alexandria Project - Concept Analysis
Concepts That Could Be Assessed

Correct	Partially Correct	Incorrect
7,496/78%	961/10%	1153/12%

When the Alexandria data was assessed, it became clear there were patterns in it, and we began to develop perception pattern analyses of each viewer. In an applied setting, being statistically significant, solving a triple blind problem sufficiently to get a first place match, is important but just a beginning. In applications what matters is much more granular.

These pattern analyses were wonderfully productive, and as the team viewers accumulated more and more sessions, the databases yielded ever more refined insights. We could tell that if Hella Hammid perceived a central geometric shape at a site there was an 88 per cent chance she was correct. We also knew how likely it was that if she mentioned a color it would be correct and, more than that, the difference within her color selections—she was best at red. Michael Crichton and Judith Orloff, both trained as

physicians, were particularly observant about people. This gave us insights that allowed us to tune our viewer teams to a specific task.

We became interested in how we could identify more viewers. Was there something that defined them as a group? In 1981 and '82 we published nonlocal perception tests in OMNI magazine, first a precognitive task, then a remote viewing. We put together personality survey instruments with the help of teams of consultants who had created the instruments. Over 23,000 people took part in these studies.^{119,120,121}

We discovered that in the area of remote viewing performance, earlier research in which Mobius viewers had participated, plus 3167 cases taken in the course of the Mobius Psi-Q II experiment series, suggested that several personality patterns associated with high intuitional functioning had emerged. SRI was also looking at the personality issue, and we both hired psychologist David Saunders, who analyzed this data and also correlated it with personal interviews in which he used the Personality Assessment System (Winne and Gittinger, 1973). In his analysis of the large Mobius dataset, he also added the SRI and MARS data. He reported: "Even without the formality of a statistical significance test, the pattern of results is suggestive. For example 14 of 19 cases are assigned to RU (a PAS designation) groups, which account for only 1/4th of the possible groups. For example, all four of the accomplished viewers are assigned to groups that include other members."¹²²

This research, although preliminary, suggests that to solve a remote viewing challenge individuals in the different personality clusters tend to develop different strategies to achieve the same goal. After 1981, the P&H document also included the Personality Assessment Profile, with what is known as the Saunders' correction – one is not just an ERA, one becomes, for instance, an ERA⁸ – of all the researchers and the viewers. As an example: "R-5: Alan Vaughan, a man, 50, author, psychic, lecturer, and parapsychological researcher. R-5's research work has primarily been in dreams and precognition. He is defined by PAS as an IRU²."¹²³

In 1984, in conjunction with Marilyn Schlitz, then at Mind-Science Foundation in San Antonio, Texas, Mobius did a reconstruction of 8th century Amerind sites along the Pecos River in Texas.¹²⁴ No location was required. Two archaeologists expert in the archaeology of the area assessed for accuracy.

"COULD NOT BE EVALUATED: The most obvious pattern to be seen in these analyses is that the great majority of the material proffered can not be evaluated; 87.38 percent according to Archaeologist #1 and 71.25 per cent for Archaeologist #2. What is significant here is that this is less a commentary on the intuitive process than the very partial state of present day archaeology's understanding of earlier cultures. This is not a criticism; it could well be argued that even 12.62 per cent of material which could be evaluated—Archaeologist #1—and 28.75 per cent for Archaeologist #2—is an extraordinary feat, given the sites' meager remains.

“EVALUATOR BIAS: The second obvious pattern is that there is a three to one differential between two archaeologists, both of whom are intimate with the project, as to what they could or could not evaluate. Why should this difference exist? This differential may well be based on some combination of exposure to field data, experience, and attitudinal issues. The difference is all the more intriguing given the very close final outcomes of the material which the two researchers could evaluate. Archaeologist #1 ranks 88.89 per cent of the material which he could evaluate as being "Correct" and/or "Partially Correct." Archaeologist #2 ranks 85.37 per cent of the material which she could evaluate as being 'Correct' and/or 'Partially Correct.' And there is this same basic three-point spread in terms of each expert evaluator's "Incorrect," category — Archaeologist #1 having 11.11 per cent and Archaeologist #2 having 14.63 per cent.

“However, in the relationship between 'Correct,' and 'Incorrect' again there is a very marked difference; Archaeologist #1 having 56.67 'Partially Correct,' and 32.22 'Correct,' and Archaeologist #2 having 12.68 per cent 'Partially Correct,' and 72.68 'Correct.’”¹²⁵

These spreads made it clear to us we had to be careful about researcher bias and ignorance if major patterns were not to be overlooked. This confirmed what earlier experiments from Deep Quest on had taught us. Only teams each expert in some area covered by the viewers, could properly assess this free ranging data.

And we looked at the viewers, whom we called Respondents (because they responded to questions):

RESPONDENTS: The accuracy differential amongst the Respondents formed a suggestive curve. Respondent R-3 is the most inexperienced viewer and he has the lowest accuracy ratings—Archaeologist #1 placing it at 70.59 per cent and Archaeologist #2 at 75.68 per cent. Respondent R-1 is the next most experienced viewer and she falls in the middle—Archaeologist #1 at 87.50 per cent and Archaeologist #2 at 78.43 per cent. Respondent R-2 is the most experienced and his accuracy rating is the highest—Archaeologist #1 giving it an extraordinary 100 per cent accuracy and Archaeologist #2 an equally extraordinary 91.45 per cent.”

In 1986, at the request of Roger Smith of the Institute for Marine Archaeology at Texas A&M, we joined a long in-progress search for a caravel from Christopher Columbus' Fourth Voyage in 1503.

Location: Within the 4.35 square mile Search Area previously defined by the INA Archaeological Director, magnetometer survey, aerial photography, sub-bottom sonar, and geological coring, had been unrewarding. Remote viewing, prior to and after the Mobius teams coming to Jamaica, selected, and then confirmed on-site, an area of 1041 feet x 541 feet = 0.02 sq. miles as the area where finds would be made. The discovery of artifact and ship remains were made within the remote viewing predicted areas, and nowhere else, although substantial areas outside of the remote viewing locations were

searched. As described and located by the Remote Viewers, a previously unknown shipwreck was found in Consensus Area I.¹²⁶

One viewer also provided a much smaller location site which, on the basis of initial success in Consensus Area I, was also pursued, with good results. Two other small single viewer sites were unproductive. Because of time and sea conditions a second Consensus Area was not searched. Visual diver inspection was the confirming source of each location prediction. To calculate the probability of selecting these locations by chance within the Search Area, consider the finds reported as a cell in a grid of 217 similar cells. The probability p of finding this one = 0.0046, which strongly suggests that chance is not an explanation for the locations. The much smaller location of material on the north side of the bay's outer reef, as predicted by one Remote Viewer would be, correspondingly, even more improbable. Some of these remains are from unidentified ships of a period later than the Columbus wrecks, but much of the debris is unidentified, even as to period. Ultimately, for reasons unrelated to Remote viewing, identification of *Capitana* and *Santiago de Palos* may never be achieved. These fragments, although significant parapsychologically, may not be able to answer in an absolute way the question of where the caravels are located.

Description and Reconstruction: Smith evaluated all 1012 concepts, giving ratings of "Correct," "Partially Correct," or "Incorrect" to 445 of this number, or 45 per cent of the total. The 1012 concepts from the Interview transcripts were sorted into 10 categories which constitute the heading framework for the *Breakdown by Concept Category* section. The 10 category headings, and the sub-categories of which they are comprised, are shown in Table One along with the counts for: Number of concepts in the category heading (shown as #); number which were "Correct" (C); "Partially Correct" (PC); "Incorrect" (IC); and "Not Evaluable" (NE). It should be remembered that 191 concepts were assigned to more than one category; for a total of 1203 concepts in this table.

ACCURACY BY CONCEPT CATEGORY

No. Concepts	Corr.	Part. Corr.	Incorr.	Non-eval.	CONCEPT CATEGORY
312	26	35	53	198	1. REMAINS 1.1 Wood; 1.2 Metal; 1.3 Frame/Ribs/Beams/Hull/Mast; 1.4 Percentage Intact; 1.5 Debris; 1.6 Spheres; 1.7 Shapes/Form; 1.8 Overall Appearance (Location); 1.9 Artifacts/Cargo
178	48	46	23	61	2. BOTTOM FEATURES 2.1 Bottom; 2.2 Shelf/Slope; 2.3 Depression/Deep Spot; 2.4 Sea Life; 2.5 Currents
52	9	9	2	32	3. OVERBURDEN 3.1 Coral; 3.2 Sand; 3.3 Mud/Silt
50	7	6	8	29	4. EVENTS SUBSEQUENT TO ABANDONING SHIP

					4.1 Storm/Hurricane; 4.2 Fire; 4.3 Land Movements (Seismic); 4.4 Water Movements
148	39	27	15	67	5. POSITIONING OF SHIP REMAINS 5.1 Shore Distance; 5.11 Underwater/Underground; 5.12 Reef; 5.2 Site Size; 5.3 Depth; 5.31 Clear Water; 5.32 Dark Water; 5.4 Distance Between Ships
44	3	3	4	34	6. DIFFERENTIATION OF TWO SHIPS
56	12	6	1	37	7. GEOLOGY 7.1 Shoreline; 7.2 Underground Water; 7.3 Salt
87	30	23	15	19	8. ROGER SMITH, ARCHAEOLOGIST 8.1 Physical Description; 8.2 Other Comments
40	5	3	7	25	9. COMMENTS RE; PROJECT 9.1 Difficulty/Ease; 9.2 Outcome
236	36	18	17	165	10. Other & Miscellaneous Comments
1203	215	176	128	667	TOTALS

The Concept Categories, as shown, can be further considered in terms of percentile accuracy. Of the 45 per cent of the data which could be evaluated, the overall accuracy rating for all Respondents and all concepts is 40 per cent “Correct,” 33 per cent “Partially Correct,” 27 per cent “Incorrect.” The “Hit Rate” (combined “Correct” and “Partially Correct”) is 73 per cent.

Under the 10 categories, the category with the highest percentage of evaluable material concerns “Bottom Features,” at 66 per cent. The lowest is “Differentiation of Two Ships,” at 23 per cent. It should be borne in mind that there is an inherent skew to this portion of the data because the originating request from Smith focused on location and descriptive material which could be used to guide the on-site search team. Initially, there was much less interest in historical reconstructive data.

Next, as shown the table below, the data can be taken from collective performance to individual results by Remote Viewer. The “Hit Rate” for each is:

REMOTE VIEWER	"HIT RATE" Per Cent
R-1	89
R-2	65
R-3	76
R-4	57
R-5	86
R-6	67
R-7	71
R-8	67

In 1986-87, we did a survey of the Grand Bahamas Banks, for the Bahamian government and, amongst other ships sites, located and excavated an American Brig *Leander*, once again comparing the remote viewing data with satellite and on-site electronic survey technologies. They [The latter?] failed to locate the site.¹²⁷ We explored working in criminology, after being asked to assist in solving the murder of a 14 year old Amish girl. It resulted in the location of a body and a first degree murder conviction. But several other attempts, while successful from a police point of view, taught us that law enforcement personnel rarely had the time to do the concept-by-concept analysis that we wanted, so we stopped working in that area. Mobius closed in 1993, and like Targ, May, and Spottiswoode, I continue to do research, writing papers to report on it, and to write books: *The Alexandria Project*,¹²⁸ *Mind Rover*,¹²⁹ and *Opening to the Infinite*.¹³⁰

Geomagnetic Activity and Local Sidereal Time

Michael Persinger, a cognitive neuroscientist and professor at Laurentia University in Canada, renewed an old interest in what he called "the paranormal." He had spent years, and produced over 100 peer reviewed papers, almost all looking at how electromagnetic fields affected individuals. He studied the effect of devices that created magnetic fields around people's heads. He first turned his attention to nonlocal consciousness in 1974, when he proposed that telepathy and clairvoyance could be explained by electromagnetic waves in the extreme low frequency ELF range.¹³¹ A theory the Deep Quest submarine experiment refuted.

In 1984, he took up nonlocal consciousness again and first explored temporal lobe signs in a normal population that included reports of "paranormal experiences." He found: "Correlations ($r = 0.50$) were found between the numbers of different psi (paranormal) experiences and the numbers of temporal lobe signs within a population of university students ($n = 99$). The strongest correlation of 0.60 occurred with a cluster of signs that

are similar to symptoms reported by patients who show chronic foci in the mesiobasal temporal lobe.”¹³²

That led him to ask that same year whether changes in the Earth’s geomagnetic field (GMF) could produce effects? In 1985 G.B. Schaut and Persinger explored and found an explicit correlation between GMF and spontaneous paranormal experiences. They examined 25 spontaneous cases and discovered that in fact GMF made a difference. When the GMF was quiet and unperturbed by solar radiation, spontaneous events were more likely to occur. When the Sun was perturbed and, thus, the GMF was disturbed, such events decreased. In a sense this should have been anticipated because when Persinger did his study there were already hundreds of papers describing physiological and psychological correlates with solar activity and the GMF affecting a wide range of species, as well as trees and other plants.¹³³ In essence the research showed that the GMF matters because all living organisms on the Earth are subject to its power, whether they are one-celled or high order mammals. But nobody had ever before looked at its relationship to the nonlocal. This was the first known environmental parameter that could be shown to affect nonlocal awareness.

University of Iceland professor of psychology, Erlendur Haraldsson, and his colleague Loftur Gissurason, also examined the relationship of geomagnetic activity and nonlocal phenomena and found a correlation.¹³⁴

It would be the first of an ongoing line of research that continues to this day. In 2001 Persinger headed a team that looked directly at remote viewing. Working with Ingo Swann he placed magnetic fields around Swann’s head. Swann “was exposed during a single setting of 30 min. to specific patterns of circumcerebral magnetic fields that significantly altered his subjective experiences.”¹³⁵

In the following days, Swann did RV sessions verbally describing the target. Persinger found, “The proportions of unusual 7-Hz spike and slow wave activity over the occipital lobes per trial were moderately correlated ($\rho = .50$) with the ratings of accuracy between these distal, hidden stimuli and his responses.”¹³⁶ Swann was subjected to a complete neuropsychological workup included Magnetic Resonance Imaging. This examination “indicated a different structural and functional organization within the parieto-occipital region of the subject's right hemisphere from organizations typically noted. The results suggest that this type of paranormal phenomenon, often dismissed as methodological artifact or accepted as proofs of spiritual existence, is correlated with neurophysiological processes and physical events. Remote viewing may be enhanced by complex experimentally generated magnetic fields designed to interact with the neuromagnetic ‘binding factor’ of consciousness.”¹³⁷

In 1987, Persinger published a paper on spontaneous telepathic experiences influenced by GMF.¹³⁸ The following year Charles Tart found a positive correlation between Ganzfeld results and GMF.¹³⁹ In 1988 Tart reported on a study using the Ganzfeld Protocol.¹⁴⁰

But it is James Spottiswoode's interest that proved to be the most important (see also Chapter 12 in this volume). In an exploratory experiment, participants tasked to do a remote viewing were placed "in an apparatus where they could be shielded from the relatively large amplitude (> 1 nT) and slow (< 0.1 Hz) variations which are registered by the GMF indices used in the retrospective studies. The apparatus used a Helmholtz coil to generate a magnetic field which could both null out external variations and provide artificial magnetic noise for a control condition."¹⁴¹ He looked at remote viewing performance using the standard free response remote viewing protocol. Two conditions were compared, "using a double blind protocol, between the shielded condition and conditions in which three kinds of magnetic noise were imposed upon subjects. In 68 trials the pilot study produced only weak evidence for AC $p = 0.3$, effect size = 0.05) and, contrary to hypothesis, AC performance was slightly higher in the magnetically noisy, rather than shielded, conditions."¹⁴²

Spottiswoode's next step was to look at existing datasets, the larger the better, rather than performing laborious sessions himself. He had a lifelong fascination with ferreting out previously unrecognized patterns in datasets, and had become well-known in science and industry for it.¹⁴³ He began by looking at the GMF *ap* measurement and remote viewing datasets and saw a pattern:

"Efforts to establish whether a correlation between anomalous cognition (AC) performance and geomagnetic fluctuations exists have met with mixed results, a negative correlation being seen in some studies and not in other comparable ones. Confirming this observation, in a large database of 2,879 free-response trials the Spearman's ρ correlation between the *ap* geomagnetic index and AC effect size was -0.029 ($p = 0.06$)."¹⁴⁴

Mixed as he says. But in that same data he saw "a large increase in the magnitude of the correlation was found at approximately 13 hours Local Sidereal Time, the longitudinal-like astronomical coordinate for the portion of the celestial sphere that is directly overhead at the time of the viewing. This apparent effect is detailed in Chapter 12, but is the LST finding real, or an artifact?

Spottiswoode would agree that it is an artifact, in the sense that while the effect is unquestionably real, the mechanism of its action is completely unknown, and local sidereal time may be a causal misinterpretation.¹⁴⁵ This is my assessment: We live in the earth, not on the earth. The five layers of the Earth's atmosphere, while a variable number, in general is some 1000km (roughly 600 miles) thick. And the magnetosphere extends beyond that. There are over a thousand papers exploring just the correlation between GMF activity and the effects on everything from single celled organisms to redwoods to high order mammals. Despite subsequent difficulties in replicating this effect (see Chapter 12), Spottiswoode might have identified an environmental effect that very significantly influences an individual's ability to open themselves to nonlocal awareness.

From all this it has become a standard part of protocols in better research that the geomagnetic field activity and the LST is recorded.

ARV

Of all the specialty protocols used in remote viewing, none has captured quite so much attention as Associated Remote viewing, generally spoken of as ARV—originally I called it Associational RV, but Associated is the version that has stuck. It's not hard to understand why ARV has generated so much interest. As I have already recounted, you can make money doing ARVs. I did it turning \$15,000 into \$150,000, Russell Targ did it making hundreds of thousands accurately predicting silver futures, 9 calls out of 9. Hal Puthoff got a percentage of several hundred thousand in order to raise \$26,000 to start a Waldorf School. And James Spottiswoode successfully called the California lottery, only to be thwarted by a printer that couldn't generate the ticket choices quickly enough for him to get to the store to register them before the deadline. As a result of these successes for many years researchers would discuss whether with ARV they could fund their research.

It was a legitimate question, and Dick Bierman of the University of Amsterdam, and Thomas Rabeyron of Nantes University decided to answer it. They collected all the data that could be deemed reliable of what were in essence precognitive remote viewing sessions, whose context was financial investment of some sort, and then ran a simulation of an automated system of their devising. They found:

“Simulations of a 32 trial ARV experiment with a roulette outcome determining the target suggest that, for viewers that perform with an effect size of around 0.35 and players using a simple betting strategy, there would be an average net result of about 10 times the starting capital.

“A review of ARV experiments yielding about 17 experiments for which trustworthy data could be obtained suggests that the mean scoring rate in a binary situation is around 63%. If these results could be confirmed this would falsify theories that predict that it is impossible to use psi in a consistent and robust way and moreover it could be the end of the financial problems in the field of psi research.

“An automated ARV-casino system is described that reduces the administrative burden in running ARV experiments. The system has been used over the years in 120 trials with three different viewers of which at least one has performed in RV trials in the past with the required effect size. However our results suggest a lower effect size of around 56% scoring rate.”¹⁴⁶

Here is their analysis:

Name	Pub.	Year	Experimenter	N	Hits	Pass	Hit-Rate (%)	Trade d	Profit in K\$	Viewers
DecmbrSilver *	Harary, 1985	1982	R. Targ	9	9	0	100.0	Y	180	1

MarchSilver	PC	1983	R. Targ	9	0	0	0.0	Y (2?)	~ -20	1
School Prjct	Puthoff, 1984	1984	H. Puthoff	30	21	0	70	Y	25	7
RT/JKseries	Targ, 1995	1995	R.Targ & Katra	7	6	2	85.7	N	0	2
Tahoe Project **	PC	1988	Spottiswoode & E. Targ	5	3	0	60.0	Y	3	2
Series I	PC	1985	Spottiswoode	11	9	9	81.8	Y	3	2
Series II	PC	1985	Spottiswoode	4	0	3	0.0	Y	-5	2
Proof of Concept	PC	1977	Schwartz	2	2	0	100.0	N	0	2
Horse race	PC	1977	Schwartz	2	2	0	100.0	Y	0.02	2
S&P500 Fri	Schwartz, 2007	1982	Schwartz	37	29	5	78.3	Y	145	7
Lottery ***	PC	2000	Spottiswoode	1	1	16	100.0	N	0	16 - 18
May series	PC	2012	May	9	8	13	90.0	Y	3	4
GK (a)	Kol.... 2012	2000- 2013	Kolodziejzyk	181	109	104	60.2	Y	96.6	6-30 (a)
DJIA forecast	Smith, 2010	2010	Smith, Laham, Moddel	7	7	0	100.0	Y	4	10
ProfPsychic	PC	2012	Moddel	19	13	6	68.0	Y	-1	1
Email series	PC	2010	Moddel	18	9		50.0	Y	-1	22
Basic 1 ARV	PC	2004- 2011	Rosenblatt	170	104	60	61.2	Y	3.5	3
several	PC	2012	Rosenblatt	29	17	25	58.6	Y	?	3
Totals				550	349	243	63.5%		\$502	

From Bierman

My personal feelings about the ARV protocol after having done a 42-week study, once a week call of the S&P500, Thursday for Friday, and having made money doing it, is that it

is difficult to sustain a program for reasons that are psychological and emotional, not nonlocal. In my case it almost ate Mobius alive. Everything else going on at the lab disappeared into the dim background. Would we win again this week? How much would we make? These were the lab's topics of conversation. It changed the focus and, since focused intention is the key to the nonlocal, I doubt that Bierman's system would work in the real world. I think ARV is an excellent choice for one-off questions whose answer is analytical in nature but can be associated with a seemingly unrelated image or object.

Remote viewing As a Social Movement:

After the era of the big labs, something very unusual and unforeseen happened. What had started as a way of approaching nonlocal consciousness, a research vector of interest to less than a dozen individuals, underwent a transformation into a social movement. As I write in November 2013, if one does a Google search on the term "remote viewing," 835,000 hits come back. IONS chief scientist Dean Radin, in 2000, mounted a online test in several formats. To date, November 2013, he reports, "over 207 million trials have been contributed by over 344,000 users."¹⁴⁷

On both Yahoo and Facebook discussion lists, more than 2000 members each actively debate the subject and pose viewing challenges to one another. The fascination with accurately describing something far distant from oneself, or that lies in the future, or the past, is very beguiling. The International Remote Viewing Association holds regular conferences in Las Vegas for its members; there are journals devoted to remote viewing. All the trappings of a passionate avocational interest are present just as they are in golfing, guns, or sailing.

There is no other laboratory protocol that has done this, and it has been almost entirely ignored by the media. I think this occurred for three reasons: 1) Remote viewing is easy to do, and easy to judge, and people do it with a success rate that is encouraging enough to keep them doing it, and they know they are not cheating; 2) Lots of books have been written about it, and lots of documentaries have been made, including over 100 live-to-video outbound experiments, done by Hella Hammid, George McMullen, Andre Vaillaincourt, Alan Vaughan, Judith Orloff and, most of all Joe McMoneagle. Deep Quest became a television program that ran for years first on broadcast and then cable television, as did parts of the Alexandria Project.

There has been a kind of easily understood populous proof of the reality of nonlocal perception. Most important in some ways is that the military viewers who went through Ingo Swann's CRV program established schools teaching CRV as a second post-retirement career, led by Paul Smith, a retired Army major, Skip Atwater, a retired captain, and Lynn Buchanan, a retired sergeant, all former STAR GATE viewers at Ft. Meade. The case can be made that these are like the medieval dojos where samurai trained. I have said for many years that remote viewing is a kind of modern mental martial art. These men are all founders of IRVA, as were Russell Targ and I. In 2012, research from this new generation of avocational researchers began to emerge from

IRVA. Debra Katz led a team that did a consensus experiment using 11 viewers that successfully predicted the outcome of the 2012 Presidential election.^{148,149}

Conclusion

In 2011, Italian experimental psychologist Patrizio Tressoldi, of the University of Padova, a scientist of the next generation, carried out his own study: “Aim of this study is to provide a demonstration of the non-local property of the human mind to connect at distance, that is, without the classical means of communication. In the first experiment, 40 participants were requested to identify in two separate sessions, 10 real and 10 false Chinese ideograms presented randomly, trying to connect mentally with the research assistant sending correct suggestions at distance that is without any possibility to communicate with them by conventional means. As control condition, in one of these two sessions the helper did not send any suggestion although the receiver believed the contrary. In the session without suggestion, the hits’ mean score was 10.55; conversely, in the condition where a research assistant tried to suggest the correct identification at distance, the hits’ mean score was 11.33. Both a frequentist and a Bayesian statistical analysis approach, allows to reject the Null Hypothesis supporting the alternative one, that is, the possibility of mental connection at distance exploiting the non-local properties of the human mind. A second experiment aimed at increasing the efficiency of this mental connection taking into account task complexity and the level of Absorption of participants as a personality trait deemed favorable to non-local communication. However the results were similar to the first experiment. Although mental connection at distance seems feasible, variables which positively moderate this kind of communication are still to be identified.”¹⁵⁰

He then went back through all of the nonlocal perception research, both Ganzfeld and Remote viewing, this time analyzing the data using both classical and Bayesian statistics. He stated explicitly that he accepted the famous phrase “extraordinary claims require extraordinary evidence,” often attributed to Carl Sagan but probably coined by University of Michigan sociologist Marcello Truzzi.¹⁵¹ Tressoldi said the aim of his study was to “present a quantitative review of the evidence which is mind may have non-local properties, that is, that some of its functions i.e. perceptual abilities may extend beyond its local functions, and beyond the space and time constraints of sensory organs. This quantitative review will be presented using both a classical frequentist and a new Bayesian meta-analytic approach.”¹⁵² His results can be seen in the tables below.

Table 1

Meta-analysis	N. studies	N.participants	Fixed ES (0.95 CI)	Z	Random ES (0.95 CI)	Z	Bayes factor (H1/H0, 2-tailed)	File drawer effect
Ganzfeld ¹	108	3650	0.12 (0.11-0.14)	19.36	0.13 (0.09-0.17)	6.39	18861051*	357§
ASC ¹	16	427	0.12 (0.09-0.15)	8.63	0.11 (0.03-0.19)	2.86	0.04764247	13§
Anticipatory responses ²	26	890	0.21 (0.15-0.27)	8.7	0.21 (0.13-0.29)	5.3	2.891308e ⁺¹³	87#
Normal SC ¹ (free	14	1026	-0.015 (-0.03-0.005)	-1.48	-0.03 (-0.06-0.002)	-1.84	0.02924606	-

response)									
Normal SC ³ (forced choice)	72	69726	0.007 (0.006-0.007)	16.2	0.011 (0.006- 0.015)	4.88	0.003162905*	187§	

¹Storm et al. 2010; ²Mossbridge et al., 2012; ³Storm et al., 2012; *one study excluded because N participants = 1; §Darlington and Hayes's (2000) formula; #Orwin's (1983) fail-safe N.

From Tressoldi

Table 2

Meta-analysis	N. studies	N.participants	Fixed ES (0.95 CI)	Z*	Bayes factor (H1/H0, 2-tailed)	File drawer effect
Dunne and Jahn (2003)	Not defined	366	0.34 (0.19-0.49)	6.3	25424503838	849**
Milton (1997)	78	1158	0.16 (0.10-0.22)	5.7		866**

*Stouffer $Z = \sum z/\sqrt{\text{Number of studies}}$; **Rosenthal's fail-safe N

From Tressoldi

He could also have said that nonlocal perception research across the many years, laboratories, many researchers and viewers, has now reached the six sigma threshold—one-in-a-billion. For context, the Higgs Boson was declared to exist on the basis there is a one-in-300-million chance that the Higgs Boson does not exist.

In answer to his own question Tressoldi concluded, and I can do no better, “If results analysed with both frequentist and Bayesian statistical approaches from more than 200 studies conducted by different researchers with more than 6000 participants in total and three different experimental protocols are not considered ‘extraordinary,’ or at least ‘sufficient’ to suggest that the human mind may have quantum-like properties, what standards can possibly apply?”¹⁵³

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